

**MARINE-BASED ECOLOGICAL EDUCATION:  
MARINE DISCOVERY CENTRES,  
MILLENNIUM KIDS, ENVIRONMENTAL  
CITIZENSHIP, AND A VISION FOR  
AN ECO-CAMP**

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**THIS THESIS IS PRESENTED IN PARTIAL FULLFILLMENT OF THE DEGREE FOR  
RESEARCH MASTERS BY TRAINING 2006**

**DECLARATION.**

**I DECLARE THAT THIS THESIS IS MY OWN ACCOUNT  
OF MY RESEARCH AND CONTAINS AS ITS MAIN CONTENT  
WORK WHICH HAS NOT PREVIOUSLY BEEN SUBMITTED  
FOR A DEGREE AT ANY TERTIARY EDUCATION INSTITUTION.**

**BRENDAN LA MAR**

## **ABSTRACT:**

The aim of this thesis is to gain knowledge and understanding about Marine-Based Ecological Education and then apply this knowledge and understanding to form the vision of an Eco-Camp in Western Australia. This has been done in three stages.

Part one is an account of my personal immersion in a grass roots not-for-profit environmental youth organization, Millennium Kids. The most valuable lessons that I learnt during this time came through the Environmental Citizenship program. Initially I was a participant, and then on three other occasions I was a facilitator for the program. It was through these programs that I began to understand the value of facilitating lessons learnt from robust healthy nature.

Part two of my research is concerned with marine education centres and uncovering their stories; documenting their ethos, education and public relations. I aim to focus on what each centre does best and how this has enabled them to become the entity that they are today. Through this process I collect information that will inform the culminating vision of this thesis, the Eco-camp.

Part three is the vision for an Eco-Camp, which has developed organically from my understandings derived from parts one and two. Through both my research on marine education centres and my personal immersion in Millennium Kids Environmental Citizenship program, I began to realize the value and need for an Eco-Camp. The Eco-Camp will be in remote robust healthy nature and will immerse participants in these environments, attuning them to the rhythm of Gaia.

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## Chapter One - Introduction:

Research and teaching about the marine environment have been going on for hundreds of years. One of the most prominent marine research institutions, Woods Hole of Massachusetts, just recently celebrated its 100<sup>th</sup> anniversary. However, much of the practice in these institutions has been reductionist: concerned with dissecting the workings of the marine environment; separating ecological systems into discrete components. While it is important to understand the components of these complex systems, I believe that this knowledge must be combined with an understanding and appreciation of the emergent whole and its relationships.

It is increasingly accepted that many complex issues in the contemporary world, and particularly those relating to the environment, can only be fully understood and effectively addressed by approaches which are multidisciplinary, holistic, flexible and integratively approached; further, that culturally engrained analytic, linear and binary ways of thinking are no longer adequate to understand and address many problems (Sterling, 2003, p. 40). The dominance of such ‘incomplete’ thinking can exacerbate the problems, which are fundamentally systemic in nature and characterised by complexity (Waddington 1977, Laszlo 1989, Meadows 1992, Clayton and Radcliffe 1996, Mulgan 1997, Bell and Morse 1999). For example, Senge, an influential systems writer suggests, “...the unhealthiness of our world today is in direct proportion to our inability to see it as a whole” (Senge 1990, p. 68). Similarly, Meadows (1982, p. 101) writes:

The world is a complex, interconnected, finite, ecological-social-psychological-economic system. We treat it as if it were not, as if it were divisible, separable, simple and infinite. Our persistent, intractable, global problems arise directly from this mismatch.

Educational paradigm shifts in the Western world have been correspondent with the ever-increasing ‘Green movement’. This movement relates to those speaking and leading others in programs of re-inhabiting the earth in a more benign relationship. It is fostering an ecological context for every aspect of life, for education, economics, government, healing and religion (Berry, 1988, p. 170). This can be clearly seen in the move of educators to promote ecological sustainability in the classroom (UNESCO, *Objectives and Strategies*, 2006-07-18). In this thesis I use the term ecological much the same as Thomas Berry did in his book *The Dream of the Earth*, “in its primary meaning as the relation of an organism to

its environment, but also as an indication of the interdependence of all the living and nonliving systems of the earth” (Berry, 1988, p. 41-42). The Western environmental movement is nearly 40 years old, but the knowledge that the earth’s workings are interlinked is much older. Indigenous peoples practiced and still practice an intimacy with their place (Berry, 1999, p. 99) and when one slows down and looks profoundly into oneself this rhythmic relation with enchanted nature resonates deep within.

To truly step into the ocean and teach from its movement, we must transcend environmentalism and its anthropocentric underpinnings through a benevolent teaching of our relationship with the greater-than-human community (Hallen, 2002). Science has taken us much farther than many could have ever expected but in its cause we have manipulated too much and not cared for enough (Berry, 1988). The contemporary sustainability movement now allows us to re-integrate scientific, spiritual and aesthetic knowledges and also to understand our world as one globally interconnected system (Berry, 1988).

Presently there is much marine science research and a strong focus on education for sustainability but there has been little academic work conceptualizing marine education through interpretive centres. An in-depth look at the role of interpretive centres for marine education is needed to further clarify their potential as an educational tool. There is a gap in our knowledge about the role and significance of on-the-ground marine discovery centres for the public. Marine discovery centres can foster the public’s knowledge of the marine environment while their overall enjoyment of the ocean is accentuated through newfound understanding. The oceans will benefit from a more responsive and responsible ethic.

Marine education at its best integrates social, cultural, ecological and economic knowledge together. Value also derives from the enhancement of the relationship between the local community and the local marine environment. The primary aim of marine education however, is to share understandings with all those who visit the area about the great importance of a healthy marine environment. Education is internationally accepted as the most effective way to confront the challenges of bringing about a more sustainable future (UNESCO, 1997).

I propose in this thesis that marine education should occur within an inter-disciplinary holistic framework rather than purely a scientific one. In chapters 1 and 3 I explore my experiences with Millennium Kids (MK) as a participant then facilitator in an Environmental Citizenship program. In chapter 4 I explore the potential for marine education in Western Australia (WA) by comparing and contrasting a set of existing marine

education centres in Australia, New Zealand and the United States. In Chapter 5 I integrate these into case examples with my own experience. Chapter 6 finishes the thesis by suggesting what this ethos of education could create in the remote healthy environments of Western Australia in the form of a Marine-Based Eco-Camp.



## **Chapter Two - My Introduction to Millennium Kids (MK):**

I had been working on my thesis for around five months and it was quickly approaching Christmas 2004. I had been away from my home (Amityville, New York), which is literally on the other side of the world, for 10 months and had a ticket to return home to my family for the Christmas season, leaving the 15<sup>th</sup> of December and returning the 10<sup>th</sup> of January. I was reasonably happy with the way my work on marine education centres was coming along but I was uncertain at that stage how my research would be useful as a real world resource. This feeling I believe, is something many academics must feel. With so much of your resource coming from books and online material, you can easily become lost in a sea of words and formalities.

It must be mentioned how serious I was about making my academic pursuit tangible. I had approached my professor to discuss with her what she thought about my situation and what, or how she might be able to guide me towards a tangible entity. She pointed out to me that she was but an academic and that she was unsure how to realize my plan to establish an Eco-Camp from an entrepreneurial perspective. However she knew a man that had pursued a similar dream and thought he might be a help to me, as a spark of inspiration, or as a source of information, and he has been a bit of both. This man was Jim Matan an American ex-pat who has lived in Margaret River for the past 30 years. His passion and vision for the Aboriginal people led him to work tirelessly for the successful establishment of the Wardan Aboriginal Centre in Indjidup. I have met him on more than a few occasions but it was on my first visit that I gained my most resounding confirmation for the real world possibilities of my work. Jim and I were discussing our perspectives of Western Australia as Americans. We concluded that sometimes it takes an outside perspective to awaken those who have always lived here to what is unique and invaluable to their culture. Jim believed in the Aboriginal people and I believe in the power of teaching and learning from the exquisite and intact ecosystems of the Western Australian coastline.

Not long after meeting with Jim I was searching my resources for a way to escape my 'academic dilemma'. I was looking for an avenue to apply my work on marine education centres to the real world. Fortunately, luck was on my side, for on one of those quickly dwindling days before my departure back to New York, I was forwarded an email from Millennium Kids (MK). Millennium Kids is a not-for-profit environmental youth organization. In this email was information regarding MK's Environmental Citizenship program. This program, just out of its inaugural trial in Ningaloo (April 2004), was to run

its first full-fledged program in early January 2005. I thought that this sounded like a great opportunity on many different fronts.

The first thing that caught my eye, as I explored the informative MK flyers attached to my email, was what a wonderful chance this could be: to explore the Denmark, Albany and Walpole regions of the South West of WA, kayaking and bushwalking while learning about local environmental issues and partaking in programs aimed at developing my person to that of a responsible environmental citizen.

The next step was to apply for the course. I filled out the application and submitted it via email to MK. I had gotten two wonderful referrals from my current supervisor for this thesis, Dr. Laura Stocker and from Dr. Anthony Weston, a Guru Professor of mine from Elon University, where I received my undergraduate degree, a Bachelor of Science in Environmental Studies. Even with these I was still nervous as to my chances, not knowing what my competition would be. Luckily enough, a day before I was to jet-set off to New York, I was accepted to a program that started three days before I was due to arrive back! No matter, I committed to grasp the opportunity. I rearranged my flight from New York back to Sydney. Despite dramas at Sydney Airport, I arrived at 1:30 a.m. on the day the course started and was whisked away by Catrina five hours later, to begin the Environmental Citizenship program and my relationship with MK.

Catrina Luz Aniere, or ‘Cat’ as we more affectionately call her, is part of the reason for the existence of MK. She is the program director who has worked tirelessly for the past 10 years empowering young people as stewards of the environment. She is in many ways what people call a champion of the environment. Through her steadfast care, young people have had a role model from whom they could receive the encouragement and guidance necessary to be heard and taken seriously as the future stewards of our world.

**Millennium Kids (MK):**

“Young people encouraging others to be aware and active in the environment”

MK, a not-for-profit organization based in Heathcote, Western Australia, began in 1996 after a small group of Western Australian students attended the United Nations ‘Leave It To Us’ environmental conference for children in the United Kingdom. On their return from the conference, the young people were disappointed with the level of youth involvement and decided to set the wheels in motion for developing their own youth environmental conference and, subsequently, their own youth-based environmental organization.

MK is a unique organization as it is run by kids, for kids (aged 10-25 years) and aims to encourage young people to be environmental leaders by being aware and active in their environment. As it is designed, young people aged 18-25 can progress to leadership and training roles within the organization. If you are either under or over these ages it does not mean that you cannot be a Millennium Kid. You are just not able to sit on the Youth Board.

The MK agenda is directed by its Youth Board, comprised of fifteen members between the ages of 10 and 25 years, and is morally supported by the declaration in the United Nations Environment Program Agenda 21, Chapter 25 which states ‘national governments should pay more attention to the opinions and concerns of children regarding the environment’ and how it should be managed for future generations. The declaration now also plays directly into the United Nations Educational, Scientific and Cultural Organizations (UNESCO) Decade for Education and Sustainable Development (DESD) 2005-2014. The overall goal of the DESD is to integrate the principles, values and practices of sustainable development into all aspects of education and learning. This educational effort will encourage changes in behaviour that will create a more sustainable future in terms of environmental integrity, economic viability and a just society for present and future generations (UNESCO, *Implementation*, 2006-07-03).

MK as of late 2005 employs two people on a full time basis: Catrina Aniere as program director and Megan Hudson who is a long time M-Kid and upon her graduation as a journalism and communications major was employed through MK by the Western Australian government to run the TravelSmart to School program. MK also employs other professionals from time to time including musicians, artists and filmmakers. It is also important to mention that with the maturing of the current MK youth leaders the Environmental Citizenship Program (ECP) has taken on a significant role within MK to ensure smooth succession of future leadership. Through the training process, opportunities will be afforded to participants to become leaders within MK, thus spawning employment opportunities.

MK has developed many programs that answer kids’ concerns about the environment and have developed partnerships with all levels of government, corporate and community sectors.

In 2003, MK was recognized as environmental leaders for their work in the Western Australian State Government’s report “Hope for the Future: The WA Sustainability Strategy” (Government of WA, 2003).

MK programs include:

- **TravelSmart to School** - this program aims to answer children's concerns about air pollution, particularly greenhouse gas emissions, by raising awareness about the impacts of high car use and our car culture. The program encourages children to achieve a 10% reduction in car use to and from school by using travel alternatives – walk, ride, bus, train or car pool. The program is a direct result of the Department for Planning and Infrastructure working in partnership with MK to listen to the opinions of children and create a program that addresses their environmental concerns.
- **Postcards to the New Millennium** – an annual process where kids have a say about the state of the environment and have their concerns tabled in Parliament.
- **MK Conference** – an annual environmental conference for kids where they develop action plans for tackling their environmental concerns each year. The conference delegates formulate a series of challenges to be presented to their local, state and national governments, as well as to the United Nations.
- **MK Green Teams Ten Steps** – an Environmental audit for students of the environment where people have the opportunity to identify environmental problems in their community and use the MK ten step processes to help solve the problem.
- **MK Environmental Citizenship Program** – The program aims to grow participants that can feed back into the MK and greater community. Training includes a range of skills such as: MK Green Teams Ten Steps, Risk Management and Assessment, Adventure Planning, Environmental Citizenship, Project Management and Safety Comes First. The program is 150-hour course and as of July 2007 TAFE Cert II accredited.
- **Growing Into Leadership** – a program designed for schools that are interested in developing leadership skills in Year 6/7 students. A series of team games get students thinking about leadership styles, what it means to be a leader and how everyone has leadership potential. The program culminates in a two-day leadership camp that incorporates a sea kayaking adventure with students developing a framework for the year based on their school's core values.

(Millennium Kids, *Overviews*, 2006-10-16).

MK has been recognized in the following ways:

- In 2000, MK was the opening presentation at the UNEP International Children's Conference in the UK.
- In 2002, MK met Dr. David Suzuki and featured in an ABC documentary.
- In 2003, MK was recognized as environmental leaders for their work in the Western Australian State Government's Hope for the Future: The WA Sustainability Strategy.
- In 2004, MK was invited to participate in World Environmental Day Exhibition with their Tunas Hijua partner in Jakarta, Indonesia.
- In October 2004, MK received the global Alcoa Environmental Health and Safety Achievement Award for their programs to help kids identify and implement solutions to environmental issues.
- In December 2004, MK was Highly Commended in the Inaugural Sustainable Transport Awards, Special Achievement by an organization for their TravelSmart to School Program, a partnership with the Department of Planning and Infrastructure.

(Millennium Kids, *News and Views*, 2006-10-16)

As has been mentioned MK was founded under the auspices of the United Nations. In its initial year a letter was written to give support to the organizations first conference and this is how it reads:

MESSAGE FROM

**Ms. Elizabeth Dowdeswell,  
Executive Director of the United Nations Environment Program**

**For  
The "Kids Helping Kids" Conference,  
South Perth, Australia, 28-29 November 1996**

A pessimist, they say is simply a well-informed optimist. Certainly, the global sweep of the environmental problems facing us is enough to take the wind out of the sails of even the best of optimists. One does not have to be an ornithologist, or a marine biologist, or a biochemist to understand that the world around us is being abused.

In a situation such as this there are only two choices available to us: passive acceptance of the state of diminishment around us – which is no choice at all – or some form of action.

Fortunately, there are millions of people worldwide who have experienced the same sense of loss and decided to do something about it. They have begun to rally around the principles of citizenship, reverence, stewardship and justice. They have taken time to take stock of how faithful they have been to the cause of conserving their environment. For them, quality of life is no longer an abstraction but a goal to be achieved.

Clearly, governments cannot be expected to tackle the environmental agenda on their own. Indeed, broad new coalitions of interest are already forming to experiment with new ways of solving environmental problems. Whichever level they work at, the process of developing such partnerships is rarely easy. But there is a new willingness to experiment with new alternatives.

“Kids Helping Kids” is a Conference unique in its vision and unusual in its scope. For far too long we have denied ourselves the opportunity of listening to our children, of heeding to their pleas for a better world, for a healthy environment – their questionings and their answers.

Whoever we are, wherever we live, whatever we may do, we all have an important stake in the success or failure in conserving the environment. This should be the message of the “Kids Helping Kids” Conference.

On behalf of the United Nations Environment Program I send my best wishes for the success of this Conference.

This is a beautiful letter written to MK. It covers much ground and sums up the passion that is felt when one is actively trying to better the environment for future generations. It also puts into perspective the global seriousness of the environmental crisis.

The above is just a short synopsis of some of the current projects and events Millennium Kids are working on.

Here I should mention more about MK’s global scope. MK is not just an Australia based organization; in fact it is worldwide, with subsidiary partner organizations that have formed in Indonesia, South Africa and Canada. These countries have caught wind of MK’s mission and decided amongst themselves that they would like to carry on in the same manner, representing MK the world over. I mention this here because it will be raised as an issue later, as one of the key ingredients MK offers as an organization: its ability to connect the world.

I will now focus on MK's Environmental Citizenship Program, followed by Marine Education Centres and how my learning's from experience and study have led to a vision for an Eco-Camp in Western Australia. Below I provide an account of how the MK Environmental Citizenship program developed.

### **History of MK Environmental Citizenship Programs:**

This is a new program for MK. In fact the South West Odyssey in January 2005, as it was termed for my trip, was the first full-fledged endeavour by MK.

The history has two stages; first Youth Challenges on the Environment and second MK Green Teams Ten Steps.

Since 1996, young Western Australians have had the opportunity to share their concerns about environmental issues at the annual 'MK Environmental Conference' (formerly 'Kids Helping Kids', 1996-1999.) As part of this conference MK provides an avenue for young people to voice their concerns in relation to the state of the environment through the 'Postcards to the New Millennium' campaign mentioned above. These concerns are collected from schools around Australia and tabled at the conference. These concerns then form part of the workshop process at the conference, where they are discussed and debated by the participants. The final process is the development of a series of Youth Challenges on the Environment, which are tabled to the Minister for the Environment at the end of the conference. These challenges are then used by MK to form the bases for project development in the coming year.

For every year that the conference has run the ocean and its preservation have been a key concern raised by the 'Postcards to the New Millennium' process and in October 2002, MK youth representatives from around Western Australia voiced their concerns over the planned resort development at Maud's Landing, Ningaloo Reef.

#### **MK Youth Challenges on the Environment, 2002 – Ocean:**

- “We challenge the state government to put a stop to the planned resort at Ningaloo and instead direct funding to protecting and rehabilitating the natural marine environment” (MK, *Unpublished*, 2004, p. 5).

Based on this challenge, the MK Youth Board voted, in May 2003 to undertake a program to take a team of MK representatives to Ningaloo Reef to view the area and write a report on what kids think should happen in the area.

Following this initial assessment of the area and a presentation based on this inaugural journey at the October 2003 Conference; the MK conference delegates developed the following broader challenge:

MK Youth Challenges on the Environment, 2003 – Water:

- “We challenge the people of Western Australia to look after all the rivers, wetlands and water bodies.” (MK, *Unpublished*, 2004, p. 6)

This challenge then led to **MK’s Green Teams Ten Steps**:

In 2001, MK youth representatives developed a strategy called the ‘MK – Green Teams Ten Steps’, a process that helps them look at an ‘*area of concern*’ and develop a practical plan of action to address this concern (see appendix #1 *The Green Teams 10 Steps*). The first step in this multi-stakeholder process requires young people to undertake an environmental assessment of their concern. After this assessment is done, MK works with the stakeholders to identify an issue that they can work on together, in partnership with other appropriate groups.

Having identified Ningaloo as an area of concern, MK looked to further their engagement as caretakers of the natural environment. MK had the foresight to recognize some of their organization’s current shortcomings in their knowledge and ability to take on these identified ‘*areas of concern*’. Therefore in November 2003, it was recognized that for MK Green Teams Projects to grow, young people required mentoring. To this end, MK representatives began planning a new component of the organization – a program that would identify and train 18-25 year olds, to facilitate MK programs and mentor young people who wanted to start their own environmental citizenship projects. This was the beginning of the Environmental Citizenship program. The young people identified the following skills as essential components of their training:

- Introduction to MK;
- Environmental Citizenship;
- Leadership Skills;
- Risk Management and Assessment;
- Adventure Planning;
- Undertake MK Ten Steps – Environmental Assessment;
- Volunteering in the Community;
- Project Management.



The pilot program was designed to train a core group of young adults to facilitate future programs for the organization. The process included team building, improving communication skills, networking and methods for facilitating large groups, through a series of sea kayaking, trekking and environmentally based activities with Capricorn Seakayaking at Cape Range National Park and Ningaloo Reef.

The team participants were selected for the initial program based on their prior involvement in community development projects and their commitment to the environment.

As mentioned above, the Ningaloo Reef area is significant to MK as it was raised as a MK Challenge on the environment in 2003. It was therefore decided that this would be the place the trial leadership program would be initiated.

The Program Director, Ms. Catrina Aniere, said, “As part of the Ningaloo program the group will be conducting environmental audits of the Cape Range National Park and surrounding reef area and also undertake a clean up of one of the beaches” (MK, *Unpublished*, 2004, p. 7).

The participants will also have the opportunity to talk to a Conservation and Land Management (CALM) representatives and other locals to gain a better understanding of the environmental issues surrounding the area.

A series of recommendations was drawn up based on the team’s research that was later presented to local authorities and the then State Minister for the Environment, the Honourable Judy Edwards. Former MK President Lauren Chapman said, “This program is different from any other leadership program because it has been developed by the participants, building on the strengths of each individual, by getting them involved in all stages of the planning process and encouraging them to take a proactive role in getting the most out of their experience” (MK, *Unpublished*, 2004, p. 8).

This trial proved to be a great success. After this program, MK approached different sponsors to fund the Environmental Citizenship program. ALCOA World Aluminium picked up the program, for the first year. Then following the success of those first two programs in 2005, it was picked up through to 2008. The funding provides for the running of the program three times a year and gives MK the financial backing and time necessary to experiment and develop the program into a fine tuned product.

### **Chapter Three - MK Environmental Citizenship Program:**

This is a chapter in which I aim to take the reader on a journey through the Millennium Kids (MK) Environmental Citizenship program. It consists of my progression through this program and my understanding of the issues and topics that are covered through the duration of each week long 'Odyssey'. To date I have been involved in two 'Odysseys' in the South West and three 'Odysseys' in the North West. In this section I discuss these experiences.

MK's approach to this program is to take the mindset of the Earth and to teach some of the lessons one might imagine the Earth teaching us: silence, humility, holiness, connectedness, courtesy, beauty, celebration, giving, restoration, obligation and wildness (Orr, 1994, p. 52). MK aims to develop participants' personal affinity with the earth through practical experiences out-of-doors. By teaching the practice of an ethic of care MK believes that participants will begin to know and love the Earth. As Stephen J. Gould (1991, p. 14) states, "human beings are unlikely to protect what they do not love and we cannot love what we do not know." Ultimately MK strives to present the program with grace, beauty and love.

#### **Hal:**

In this subsection I introduce an important man in my journey thus far.

Hal Paine is an important component of the Environmental Citizenship programs and even more so for the proposed Eco-camp along the North West Cape. Hal is the owner and manager of Capricorn Seakayaking. His environmental ethic and his dedication to the protection of the Western Australian marine environment as well as his credentials as a qualified Kayak Eco-Tour Guide are the basis of his value as a facilitator for MK's adventure experiences.

Hal is one of the main keys to the Eco-Camp on the North West Cape because he has established himself in the local township of Exmouth as a responsible tour-guide operator, having operated in the region for eight years. He has built a positive relationship with CALM (Conservation and Land Management); their Exmouth district office operates in Cape Range National Park and Ningaloo Reef. Hal's open-minded approach to life has seen him accomplish many things: he is a Homeopath, has a Bachelor of Social Science and a Graduate Diploma in Outdoor Pursuits, he is a devoted surfer, and father. Because of his envisioning a more holistic environmentally conscientious world he has been accepted by the North West Cape Aboriginal People and has formed Indigeco, a partnership

organization between the two which is based on this trust. This acceptance has been of great importance for Hal; he has gone against many people's advice and wishes in forging this relationship. But when speaking with him you can see and hear that he believes it is for the greater good of Gaia (mother Earth), further confirming his innate affinity for life. This idea of the enchantment of the world can also be sourced from E.O. Wilson's (1984) book *Biophilia*.

### **Gaia:**

A quick interlude here is necessary to explain my usage of the word *Gaia*. This is a way for us to personalize our relationship with Earth. Earth is so much more than just earth! We are using language as a way of connecting us to our greater home, Gaia. I use this word because I want to give life and vibrancy in expressing the gratitude we ought to feel towards Gaia. Too often I believe we use scientific words, and in this use of language we lose the soul of the world's being in all its grandness. In fact I sometimes wonder at the name 'Earth', for is not our planet made up of almost 75% water?

The Gaia Hypothesis, now advanced to the level of theory, was the brainchild of the British atmospheric chemist James Lovelock and the American microbiologist Lynn Margulis. First introduced by Dr. Lovelock in 1972 in the journal *Atmospheric Environment*, it was named for the Greek goddess of the Earth (Todd, 1994, p. 97).

The theory contends that Gaia, as a planet, constitutes a single biogeophysical system – Dr. Lovelock called it a “living entity” – made up of countless interconnected, interdependent, self-organizing living systems and subsystems (Berry, 1988, p. 21). The planet and its life forms evolved as a unit and the myriad life forms on Gaia are inseparable components of the planet itself. The theory, now generally termed Earth System Science, is now accepted by many in the mainstream scientific community worldwide (Todd, 2004, p. 97). Gaia theory, in the words of Dr. Lovelock as quoted in *A Safe and Sustainable World* by Nancy Jack Todd (1994, p. 97), “is a new way of organizing facts about life on Earth. It is a new view because it includes the evolution of the planet as well as that of the organisms upon it and it sees these hitherto separate evolutions as a single tightly coupled process.” Elsewhere he explained, “The entire range of living matter on Earth from whales to viruses and from oaks to algae could be regarded as constituting a single living entity capable of maintaining the Earth's atmosphere to suit its overall needs and endowed with faculties and powers beyond those of its constituent parts.” Although originally presented as a scientific concept Gaia has also become a metonym for the interconnectedness of life generally.

The experience of life interacting on all levels is extremely complex yet simple and elegant. In places like Nornalup Inlet of the South West and Ningaloo in the North West this simplicity can be sometimes felt as well as seen. It is when, in my mind as I imagine it now, the sun is fading slowly towards the horizon, and sun beams dance through the air, the afternoon sea breeze has lifted the oceans mist so it coats the atmosphere with its essence. At this moment you can taste ocean in your mouth, through your nose and you can feel it inside your lungs. This feeling of interconnectedness is what and how I believe Gaia wants us to feel, not disparate from, but rather as part of the living system. It is this feeling that I wish to bring to those who have not been able to find it, with no excuses as to why they have not experienced it themselves. The feeling is available anywhere but there are those sacred places that evoke it more strongly than others. It is one of the main reasons that I believe MK has chosen two such magical places to run their programs. Both Ningaloo of the North West and Walpole of the South West exude sacredness and are perfect for enlightenment.

#### **Away from the Day-to-Day:**

In this subsection I aim to explain the power of removing people from modernity and relocating them in a remote robust environment.

The effectiveness of taking young people (modern, western, technological, multi-tasking) out of their normalcy and day-to-day routines cannot be understated. To be removed from cellular phones, MP3 players and the idiot box (T.V.) and to place oneself within a healthy naturally functioning ecosystem - a world that a few short centuries ago was all that we knew but that is now quite foreign - is both an experience of overcoming trepidation and of rekindling basic human sensitivities (Berry, 1998, p. 52). Life is more than just being a part of one's own nuclear family, much less confinement to an individualistic sense of self.

There is the realization that life is *so* grand, *so* expansive and at the same time intricately beautiful. MK aims to bring this to mind in those that partake in these experiences: to open their lives to the breadth of knowledge that can only be acquired by returning to our native place (Berry, 1988, pp. 1-5).

Thomas Berry (1988):

We are returning to our native place after a long absence, meeting once again with our kin in the earth community. For too long we have been away somewhere, entranced with our industrial world of wires and wheels, concrete and steel and our unending highways, where we race back and forth in continual frenzy.

The world of life, of spontaneity, the world of dawn and sunset and glittering stars in the dark night heavens, the world of wind and rain, of meadow flowers and flowing streams, of hickory and oak and maple and spruce and pineland forests, the world of desert and sand and prairie grasses and within all this the eagle and the hawk, the mockingbird and the chickadee, the deer and the bear, the coyote, the raccoon, the whale and the seal and the salmon returning upstream to spawn. All this, the wilderness world recently rediscovered with heightened emotional sensitivity. The experience of the entire human community at the moment of reconciliation with the divine after the long period of alienation and human wandering away from the true center (pp. 1-2).

I believe that this excerpt speaks well for what we are doing on the Environmental Citizenship program. It is this re-experiencing of the natural world that occurs on our Odysseys as well as it is a re-discovering of what truly keeps us alive. That is not the pumping pulse of the cities we live in but that it is the pulse of Gaia. The only way you can discover this is by stepping out of those cities and walking into nature to experience Gaia on her terms.

#### **Knowledge of Indigenous Species:**

In this subsection I describe MK's attempts at making participants aware of the plights of indigenous animal species.

Having embedded the participants in the natural world around them, MK facilitators begin to open the participants' eyes and emotions to what is happening in the immediate area. This part of the program aims to better perceive how much our physical and mental well-being, our humanity, relies on recognizing and celebrating the richness of our dependence

on natural processes and diversity, including those of the sea (Kellert, 2003, p. 1). This part of the program, which comes under the umbrella of outreach and participation, also involves partnerships with other organizations.

Programs in the two areas in which MK operates (South West and North West) teach an ethic of care towards indigenous species. MK has taken on two projects with the Environmental Citizenship programs. In the South West in Albany, at Two Peoples Bay, the work is in the education for the preservation of the critically endangered Gilbert's Potoroo. In the North West at Ningaloo MK helps realize CALM's objectives by collaborating with the Cape Conservation Group (CCG) in voluntary fieldwork accessing numbers and habitat of the endangered Black Footed Rock Wallaby. Ecological literacy including knowledge of native species is central to the MK journey.

#### **Affinity with Nature:**

This subsection describes MK's aim to develop in participants a personal affinity with nature. The purpose is to encourage a bond with the natural world. This subsection then leads into the following two subsections where affinity is made practical by the harnessing of nature's power through wind energy and elaborated upon through wild writing.

What is an affinity with nature and why is it important to undertake this learning? These are two questions that quickly come to mind. Participants generally come from the metropolitan area of Perth, Western Australia, and are accustomed to thinking in an anthropocentric manner. It is essential for MK to de-anthropocentrize (Weston, 2004, pp. 92-107) these participants as well as to awaken them to the immediate plight of the local flora and fauna. We make the point that the flora and fauna are now in danger from uneducated human infringement, resulting from not understanding or fully comprehending the ecosystem and its relation to human fitness.

The MK program aims to mature participants in what David Orr terms, 'biocentric wisdom', which is, "the capacity to nurture and shelter life – a fitting standard for a species calling itself *Homo sapiens*." (Orr, 1994, p. 52) This concept is important because it is what MK wishes to get the participants' minds around. We want them to gain an understanding of the greater world, in which all life forms are morally considered and decisions are made through a multifaceted approach. In teaching this acceptance the scope of understanding and of care is deeply accentuated. It is hoped that this compassion will translate into further actions and thought processes among participants.

### **Wind Energy:**

A visit to the wind farm can awaken a sense of grandeur for both the awesome power of nature and humanity's ability to harness Gaia's energy.

Important to the South West Odyssey is MK's visit to Albany's wind farm on WA's South Coast. Albany relies heavily upon the production of energy from the wind, a renewable energy source. The wind farm in my opinion is absolutely amazing. During our visit in January 2005 the wind was blowing around 25 knots off the ocean, turning twelve giant turbines, all humming the song of clean energy. They were magnificent structures; strong and rugged on a beautiful coastline providing 30,000 people with 75% of their required energy – replacing 77,000 tons of greenhouse gas emissions with clean energy. Over their twenty-year lifetime, they will have saved the world 1.45 million tonnes of waste from emissions (statistics recorded at wind farm from information boards).

This experience is one that brings forth strong emotions and insights. It is of immense value to see human technology functioning on a large scale as a beacon of sustainability. By seeing, hearing and actually being able to walk up to these turbines and touch them we were able to attune our senses into the prospects of harnessing Gaia's energy in a renewable sustainable manner.

### **Wild Writing:**

"You learn that if you sit down in the woods and wait, something happens"  
Henry David Thoreau (*WOW Quotes, Sayings and Poetry Collection*, 2006-07-26)

Wild writing is an exercise used by MK to enable participants to express the sublime.

Wild writing experiences lead to an unlocking of emotions towards one's relationship with the natural environment. MK supports this emotional breakthrough throughout the program in different ways. At the very beginning of the program each participant is handed a journal and a pen. They are given to them as tools to record information and to participate in workshops that are run during the program. However the journal is not only to be used for note taking and the recording of information, there are many more uses for them one of which is Wild Writing; this is a major focus of what MK wants to be developed during the Odyssey.

Wild Writing is exactly what it sounds like and what it does and where it takes you is extraordinary. Wild Writing is rooted in the concept that the sense of awe toward creation helped inspire the development of language and the desire of protohumans to talk, to sing and write poetry in the first place (Orr, 1994, p. 51). Elemental things like flowing water, wind, trees, clouds, rain, mist, mountains, landscape, animal behaviour, changing seasons, the night sky and the mysteries of the life cycle gave birth to thought and language (Orr, 1994, p. 51). On the South West Odyssey we used the natural elements as a means to reflect on our experience. We would set about to find a spot that *called* to us and then write about what came to mind. This was done at first as a set exercise, but the opportunities abound while one is out in the world with a pen and a journal.

I will give you two examples of what I wrote. The first is when I was back in the bush at our campsite contemplating the wind.

### Wind

What's the winds' sound?  
On farmland in Albany it abounds,  
Off grassy knolls, it whisks, then strolls.  
On a crisp spark it bites through branch bark.  
If I lie low, as the sun fades slow.  
Clean lines bend through golden shadow.  
Trees manipulated by constant breeze.  
Time tells tales slow, like a snails flow.  
Oh, the wind will blow.  
Oh, it came and now it goes.

These are powerful emotions being evoked. The expression of the land, the timelessness of the experience and the feeling of that particular moment freed these emotions from myself. The beauty of those words is that, as I re-read them, I re-live that moment and I can picture where I was and how I felt when I wrote that poem. I believe that all persons should experience these emotions brought forth through Wild Writing, they are enlivening.



The following is what I wrote during another session of wild writing in which the focus is not to think but to spontaneously write what came to mind.

### A Stunning Cycle of Simplicity

There is hum,  
it's high pitched and teetering  
on the canopy of the forest.  
It's enchanting to hear.  
It brings motion to the still air.  
A few branches lower in the trees,  
there is a rhythmic clapping.  
I know it is an insect, probably a beetle.  
They bring synchronicity to a standstill.  
For their individual claps are poignant.  
And now, now the wind sings its tune.  
Brushing past my face and rustling by my ears.  
It does the same with the trees,  
though they are much more practised in its presence.  
They sway with the breeze,  
as each leaf dances magically  
catching a glimpse of new light, reflection, energy, life.....  
The fell tree that is my seat has experienced many things.  
Its life has been a window into the pattern of our world.  
Find your spot, grow and secure deep roots.  
Let out your branches and accept gifts from earth.  
At the same time give back to your place.  
And when your moment has come,  
return to the soil.  
A stunning cycle of simplicity.

Again I think that this writing reveals an in-depth feeling for nature that is not normally available to most individuals. I know that for myself words such as these are much harder to produce in the confines of an office or in the library than they are when you are outdoors and in the bush. And upon deeper contemplation I am not sure if they are even possible at all to produce unless you are in nature or have just been so.

#### **Guest Leaders and Valuable Words:**

MK makes use of local people in the areas that we visit, and they are a wonderful resource for the Environmental Citizenship program. It is inspirational to meet and listen to those that are practised in their ways.

When speaking on the value of good words, I am immediately reminded of a man we met in Albany, his name is John Woodbury. For a number of years John Woodbury has been a

mentor and facilitator for MK. Founder of the Woodbury Boston School in the Albany-Denmark region, John has been dedicated to environmental preservation and conservation throughout his life and has focused his teachings on youth becoming active and aware in the environment. MK set up an initial meeting with John on our second night in Denmark. The following is what John shared with us, as I interpreted it in my journal log,

John spoke well, much like I've come to know of Gurus for the environment. His process of action as opposed to thinking struck deep chords in my mind. Stating that he did not like to think or prepare rather he just likes to do. With this he is able to approach life with honesty and truth. What is said is what is being felt. There are more things in life than preparation. It is the sharing of emotions and energy in a group circle that allow for true communication. I enjoyed these ideas for I believe in them. One must never disdain (from) one's self. A path is chosen then followed. John was a rebel, with a family. Who it seems has supported him the whole way through. He has opened an environmental school. He is planting seeds of love and understanding. They will grow up with a more appreciative knowledge of what it means to be part of this world and that is great. He stated, "I wanted to build a school where it was O.K. to love. Where you can hug and care for those involved. Perverts made it wrong to hug because they can't do it. But something is wrong, real wrong if you can't hug. Everyone loves a true hug." I love a hug and I'm sure he was on to something real good when he realized this and took it into action, because I know a lot of people who truly love a hug.

When the Environmental Citizenship program is in Exmouth on the North West Odyssey we meet with local Aboriginal friends Ann Preest and Maureen Dodd who are part of the North West Cape Exmouth Aboriginal Corporation. With their welcome to country and blessing to teach and learn from their land on the Cape Range National Park and Ningaloo Reef, MK is able to further the process of bridging the gap of knowledge between Western scientific understanding of place and the Aboriginal holistic sense and knowledge of place. When we are in town we also meet with Susie Bedford, a marine biologist who teaches at Exmouth District High School. She holds a deep passion and understanding of the Cape Range National Park and Ningaloo Reef. Her knowledge and practical wisdom is highly appreciated when we conduct a program in the North West.

MK is also trying to search out an Aboriginal component and welcome to country for the South West program. For various reasons MK is not as adept and knowledgeable about the

land in this region and it is taking us more time to figure out how and where exactly we want to run the program.

### **A Sense of Place:**

In this subsection I discuss the emphasis within the Environmental Citizenship program of understanding your ecology of place. I then give an example of a family that understands this concept and has developed wonderfully from it.

For further knowledge to be gained about the perception of a person's 'sense of place' a pilgrimage must be taken. This pilgrimage is a journey through uncertain terrain towards another place – a place that, as sacred, is itself a place of the *Other*, as well as being a reconnection with the source. Reconnecting with the source also means taking a step away from the modern ethos of individualism, technologism and consumerism, and is ultimately a gesture of resacralisation (Rigby, 2000, pp. 23-30).

Such a pilgrimage is embarked upon during the Environmental Citizenship program and it is through this that we develop our sense of place. This is not a new phenomenon but it is a calling and feeling that grows as one becomes ever more immersed in the mystery and magic of the universe. There is a need that many of us presently feel and, as Simone Weil (1971) further relates, rootedness in a place is “the most important and least recognized need of the human soul” (p.43). MK aims to build the capacity of participants to more fully comprehend the place that they call home.

In Walpole there is a family that has done as Gary Snyder (1974), has suggested, “find your place on the planet dig in and take responsibility from there” (p. 101): they are the Muir family. John Muir (not related) has been quoted as saying that, “the quickest way into the universe is through the wilderness” (WOW, *Quotes, Sayings and Poetry Collection*, 2006-07-26). The Muir family of Walpole, one might then say, has deep universal understanding through their sense of the importance of place. For over 150 years and through seven generations the Muir family have been associated with the Walpole region. Presently, they run WOW Wilderness Eco-Cruises, initiated as a family partnership in 1994 between Ross and Marion Muir and their son Gary Muir. WOW primarily operates a daily-guided journey into the heart of the Walpole Nornalup National Park on the South Coast of Western Australia. The tour incorporates a boat cruise and an interpretive experience into the Nuyts Wilderness Area (WOW, *Who is WOW*, 2006-07-31).

The Walpole Nornalup National Park is one of the oldest parks in Western Australia. It is also the area in which MK ran its January 2006 Environmental Citizenship program. Before this area was vested as a national park, the legendary stockmen who had annually brought their stock to the coast for grazing since 1850 had managed the land. Ross and Gary are descendants of these original South Coast stockmen (WOW, *Who is WOW*, 2006-07-31).

Prior to WOW, Gary was an officer with CALM for over twelve years. This included five years as the recreation, tourism and interpretation officer in Walpole. He was also seconded as Project Leader for the planning of the Valley of the Giants and Tree Top Walk development. Gary was the Inaugural Australian National Eco-Guide in 2002 and was awarded the Western Australian FACET Golden Guide at the State Tourism Awards in 2003 (WOW, *Who is WOW*, 2006-07-31).

Ross and Marion, Gary's parents, have been involved for years in tourism, originally running the *Muir's Tours*, daily four wheel drive expeditions into the Walpole Nornalup National Park. Ross is an executive committee member of the Walpole Nornalup Tourism Association and Marion is an active Volunteer of the Walpole Tourist Bureau. Both are dedicated to providing quality service and experiences for the visitors to Walpole (WOW *Who is WOW*, 2006-07-31).

The WOW Team provides enjoyable experiences that generate understanding, appreciation and stewardship of the environment for a wide range of visitors. The WOW Team highlight their ability to cater to specialist groups, including presumably MK. I believe it is an imperative step for MK and this program to get this interpretive, hands on, love of place knowledge. The value of such knowledge cannot be comprehended in monetary terms; information such as this is priceless.

It became clear on the second MK trip to the South West that Gary Muir had an important role to play in MK's South West Environmental Citizenship program. As David Orr states, "I do not know whether it is possible to love the planet or not, but I do know that it is possible to love the places that we can see, touch, smell and experience" (1994, p. 147). From reading about the Muir family of Walpole one gets the sense that these people truly love the place that has made them who they are. Having visited and run a program from this place I also see the purposefulness of a pilgrimage through this magical environment. I see it fitting that the Muir's be a part of this experience.

In April 2006 Gary Muir was contacted and responded with excitement to the prospects of working with MK. This is an important step for MK. The Muir family's local knowledge and love of place will benefit the program and its aims greatly.

**Place-Based Education:**

This subsection deals with the reordering of our educational priorities towards an understanding of the ecology of place.

The work that MK is currently doing in the 18-25 year old range is starting to spread. "Growing into Leadership" is a program for younger people and is currently being run with Bateman upper primary classes and a trial is being set to run with Wesley College students. All three of these programs are, at a deeper level, beginning to focus on the reordering of educational priorities.

David Orr (1994) states that, "it is commonly believed that the role of education is only to equip young people for work in the new global economy in which trillions of dollars of capital roam the earth in search of the highest rate of return" (p. 163). This pedagogy then determines the type of people that we are 'developing' in our school systems. Those equipped to serve the economy we have created, whom Robert Reich (1991) calls "symbolic analysts," these people earn their keep by "simplifying reality into abstract images that can be rearranged, juggled, experimented with, communicated to other specialists and then, eventually, transformed back into reality" (pp.177-179). Symbolic analysts "rarely come into direct contact with the ultimate beneficiaries of their work"; rather, they mostly:

...sit before computer terminals - examining words and numbers, moving them, altering them, trying out new words and numbers, formulating and testing hypotheses, designing or strategizing. They also spend long hours in meetings or on the telephone and even longer hours in jet planes and hotels - advising, making presentations, giving briefings, doing deals (Reich, 1991, p. 179).

These persons who are structured through the rigidity of a modern educational system seem to become morally anemic and their services "do not necessarily improve society," a fact that does not seem to matter to them, perhaps because they are too busy "moving from project to project... from one software problem to another, to another movie script, another

advertising campaign, another financial restructuring” (Reich, 1991, pp. 185-237). In America these people account for approximately 20% of the population and I would assume the number to be similar in Australia as well (Reich, 1991, p. 250). However, they are increasingly disconnected from any interaction with or sense of responsibility for the other four fifths (Reich, 1991, p. 250). People who have been educated in such a way do not have a notion or care to the importance of the long-term human prospect nor are they prepared by intellect or affection to improve any place. David Orr (1994), who is quite dutiful in his arguments concerning the importance of environmental education states that these people are “sure signs of the failure of the schools and colleges that presume to educate them but failed to tell them what an education is for on a planet with a biosphere” (p. 164).

For those of us with a deep care for our world and an understanding for the impact we have upon it, we say the world does not need more rootless citizens. It needs instead a movement of young people equipped with the vision, the moral stamina and intellectual depth necessary to become stewards of their neighbourhoods, towns and communities. This type of education is something that was not even remotely presented to me as a youngster and it is still but a small notion in most children’s minds. However it is not something that is going completely unnoticed. MK is taking on these issues with their Environmental Citizenship program. They are training young adults to consider the environment in its totality – natural and built, technological and social (economic, political, cultural-historical, moral and aesthetic). Through these principles they are then being trained on how to run projects that care for the environment and empower the young. This is done through the Travelsmart to school program, Suitcase Scientist and the MK Green Teams Ten Steps. These are the large-scale programs that are currently being run at MK. These are not the only tools through which the transformation of educational priorities is occurring. For instance another event that operates on a large scale is the MK Conference, which will be held in Bunbury, Western Australia from the 4-6 of October 2006. The conference will be running side by side with the Australian Association Environmental Educators Expo. By having these two events running together it is a wonderful opportunity for the wisdom of adults to mix with the freshness of the MK youth representatives. The main focal point for the youths at this conference should revolve around their concept of place, giving room for them to explore how they can be students of their place, what this entails and how education can help to ground local cultures and communities in an understanding of the particularities of place (Gregory & Williams, 1999, pp. 16-17).

Also through contact with the Wardan Aboriginal Centre based in Indjidup, MK has made connections with Bill Webb who is the elder of the Wardan. We are looking to build a relationship and are also investigating the possibilities of gaining knowledge from his brother Wayne Webb who lives at Peaceful Bay between Walpole and Denmark. He is an anthropologist and historian of his peoples and would be of great value to the program. We think these people are of value to the program because environmental education is multifaceted; it is a synthesis of ideas, values and skills from many disciplines including soil, water, culture and mind.

MK believes that taking young persons on outdoor educational experiences is an important and fruitful way to gain local knowledge. This then ideally leads to an acceptance into the local community that we are visiting and an overall feeling of affirmation for the participants' work.

#### **Benefiting the Community:**

This subsection deals with the concept of giving back to the local community. As Aldo Leopold (1991) noted, for conservation to become "real and important" it must be "grown from the bottom up" (p. 300).

This is one of the overriding goals of the program - to benefit the community. We do not want to come off as city folk on an adventure down South or up North: taking, acquiring and developing knowledge only to disappear until the next year. We are not residents of the areas we are visiting but we aim to further develop the Environmental Citizenship program so that young people from the areas we are visiting can join the program, learn from it and then rejoin their local community with ideas of environmental empowerment. These young people will also acquire a perspective and understanding of how outsiders view the land that they are from.

As was mentioned earlier, the Gilbert's Potoroo of the South West is a critically endangered species and this is something that struck a nerve at MK. We are made aware of large 'huggable' species on a global scale such as, Polar Bears and Elephants but we are much less informed when it comes to the plight of local biological diversity. MK in the month of June 2005 secured a \$2,500 grant to help in the fight to preserve the species of Gilbert's Potoroo. MK has made the decision to use the money as follows: involve a local school from the Albany area to go to Two People's Bay and gain all knowledge that there is about the plight of the Potoroo, then have a Perth School do the same. Then both schools will share their information and decide on the best way to protect the species. This is the MK

process, involving and empowering the youth to take action and involve themselves in their environment. It is also about building links between the city and the country.

In Exmouth, MK has given back to the community in a few valuable ways. For example, we have begun to form a bond with the Aboriginal spokespeople of the area. During June, MK was invited to take part in NAIDOC (National Aboriginal and Islander Day Observance Committee) Week celebrations in Exmouth. This was unique and powerful for those involved for it was the first time NAIDOC activities had been run in the town. As part of our role we helped with an Exhibition of Indigenous Art and we were present for the very first raising of the Aboriginal flag in Exmouth. We also ran a ‘Growing into Leadership’ camp for the Exmouth District High School students in partnership with Capricorn Seakayaking.

This building of trust with the Traditional Stewards of the North West Cape is the correct approach. It is not only proper in the moral and ethical sense but there is a feeling of safety and respect that you get when the Aboriginal people know that you are there and that you respect those that were there before you.

### **Blessing of the Earth:**

In this subsection I aim to give the reader insight into how my journey has nurtured the spiritual awakening that has taken form as the Blessing of the Earth Ceremony.

I believe that one of my main contributions as a facilitator for the Environmental Citizenship programs with MK has been in the aesthetic – spiritual realms. It was not a niche that I immediately saw myself filling but through circumstances I came to believe that I would be able to take on this role.

These circumstances have been developing for some years now and I would say they were largely on a subconscious level. Since I was very young I have always had an affinity for the outdoors; from 12 and under this mostly had to do with playing sports, games and generally just running amuck. However through this period I was lucky enough to have grown up on the Great South Bay of Long Island in Amityville, New York. I had a canal in my backyard and from a young age, perhaps four or five, we had a boat, in which we could escape the houses, the people and the noise. As spring arrived, the lawn would thaw and our house’s ultimate indicator of the end of winter would appear, crocus flowers commonly known as snowballs. From this we knew the canal no longer ran the risk of freezing over



and that it was safe to put the boat in the water. At first we just owned a beater<sup>1</sup> but a few years down the line we acquired a 20ft Grady White. God I love that boat, and we still do have it, though she now lies dormant. Anyhow what became the captor of my imagination was what lay on the other side of that wonderful bay. It was something huge, almost incomprehensible and unfathomably held back by an astounding system of barrier sand islands; this captor of my imagination was the Atlantic Ocean.

The Atlantic Ocean has been a part of my life for some time now. My parents tell stories of taking me to Gilgo Beach when I was just an infant. Gallagher, (1993) and Tuan, (1977) before him talk of how humans are inescapably place-centric creatures shaped in important ways by the localities of our birth and upbringing. David Orr (1994) states, “We learn first those things in our immediate surroundings and these we soak in consciously and subconsciously through sight, smell, feel, sound, taste and perhaps other senses we do not yet understand...Our preferences for landscapes are often shaped by what was familiar to us early on” (pp. 160-161). Looking back now I know that these early childhood experiences have helped develop in me a definitive connection and sense of comfort in the presence of the ocean.

As I grew I enjoyed the winter, especially at the crux of a snowstorm, when the glistening white poetry from the sky would bring the streets to a halt, sheathing boundaries of where property ended and street began. Even at these times, though, I was drawn to my backyard or the end of the block to stare out towards the ocean and wonder how it might look, in what way it was reacting to and churning with the storm. In time to come I would find out.

As the seasons changed and summer came I would venture further into the ocean; at first bodysurfing, then onto the body board and for my twelfth birthday my father got me a surfboard. From that moment and, as I see it, for the rest of my life I was and will be a surfer.

The ocean has been so many things to me, a place of release, meditation and knowledge. It has given me confidence, bliss and serenity while at other times it has pummelled me, belittling my presence and more than once it has tested my will to live. Many of these emotions are simply experienced in the moment, which I believe is one of the most wondrous and magnetic aspects of the ocean. It has an ability to take you in and no matter

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<sup>1</sup> Run down boat

what was on your mind, or what is happening in your life, good or bad, the ocean, for the time you are in her aura, washes your mind clear.

In retrospect I was only aware of these emotions subconsciously. I am not exactly sure when I started to outwardly understand the importance of the ocean in my life. It's funny for, as I think about my relationship with the ocean, my mind wanders to my parents and I am sure that they were aware of my innate connection with the ocean at an earlier time than I was. They could tell by my mood, whether or not I had surfed that day (elated), that week (O.K.), or more than two weeks ago (moody), when they would say, "Brendan go surf!" and I would reply, "I need some waves for that".

I believe that it was my senior year in high school when I started to really become aware of my footprint upon our world. I was lucky enough to take an environmental science course with Mr. Payoski, a college professor who came over to my high school to teach this one course, a blessing in itself. It was that final year of high school that I started to learn about the impact of humans upon the environment and I was flabbergasted.

I then chose to go to school ten hours south from where I lived at Elon University in North Carolina. The college was in the North Central part of the state two and half hours from the ocean. This was a conscientious choice and a present from my neighbours summed up my decision quite nicely. It was a picture of a lighthouse with the ocean behind it and the words below the picture read, "To discover new oceans you must lose sight of the coast". I came in declaring environmental studies as my major and hard lined straight into core classes: chemistry, population biology and environmental science, which were all good and well, but it was not until my sophomore year that a spark of enlightenment would occur.

I enrolled for a course taught by Dr. Anthony Weston, an environmental philosopher. The course was called Theories of Human Relations with Nature and, to say the least, it was mind-blowing. We were assigned summer reading and as I was an ocean lifeguard at the time, I was infused with Morris Berman's (1982) book *The Reenchantment of the World* and with my playground, the ocean. As I went back to University and attended my first day of this course I was again taken aback: there were no desks – just couches and seats situated in a circle; the walls were painted with trees and flowers – not the mindless monotone colours I was accustomed with; and our professor wanted to know what we thought and how we felt. He wanted us to be part of the experience – not thoughtless puppets memorizing and reciting known information. This is a quick story of how important education is to Anthony. Our class had just completed Daniel Quinn's (1995) book *Ishmael*,

and Anthony came to class dressed in a Gorilla suit. It was a sweltering hot day and class was for more than an hour. He proceeded to answer all questions in first person as if he was Ishmael and, for many of us, that class defined who Anthony was: a person who cared deeply about how his students perceived the world. And I believe that from collective moments such as these in my college years, I myself began to develop a deep care and sense of interconnectedness with our world.

I graduated University and moved back to Amityville, New York. It was 2002 and I was unsure what lay ahead. I was to ocean lifeguard once again for the summer months, which as always was great. The work ended in September and I spent this month, and half the next, chasing Hurricane swells up and down the North East coast of the U.S. It was tremendously enjoyable and inspiring to see the beauty and variance of the coasts north and south of New York. During this time my father had been building to a steady crescendo of, “Brendan your gonna have to find yourself a real job”. He took it upon himself to set me up with an interview for the job of Environmental Technician with the Tyree Organization. Ah, what to say about Tyree? “It was an experience”. Not wanting to delve too deeply here, I will just say that for 10 months I worked the standard 40 hours a week, doing water remediation, mainly driving all over New York’s five boroughs and Long Island collecting water samples. I learned very little of what I was doing and why. During this period the feeling of interconnectedness with the natural world began to dwindle; I was sliding back into the New York frame of mind, fast paced and multi-tasking.

It took 10 months to quit. I managed through late fall, winter and spring but at the onset of summer I began to long for the ocean. This longing culminated one beautiful summer’s night. The promise of good waves in the morning led me to sit out in the backyard by the canal and contemplate my life. I awoke early, as I normally would for work, though I did not head to work, rather I headed to the ocean. I had a wondrous morning of waves; by chance I met friends with whom a delicious breakfast was made and I was alive again. I was happy. I headed to work that afternoon and gave my two-week notice. I was not sure the plan but I knew it was time for a change.

Six months later I was in Western Australia at Murdoch University. Since being here I have reconnected with Gaia. This feeling of belonging, of actually being a part of this marvellous world is a comfort to me. With MK and their Environmental Citizenship program I have been able to get lost: and find myself in the same instance.

The program immerses the participants in a healthy outdoor marine environment, you are lost from the world of modernity; and are able reconnect with nature's rhythms. It is through this feeling that the Blessing of the Earth has evolved.

After being a participant in the MK Environmental Citizenship January 2005 program in the South West, I was chosen to be a co-facilitator for the coming program at Ningaloo Reef in the North West. Before the departure and through our long road trip up the coast to Ningaloo I had been thinking of a way in which I could add to the program. I had ideas ranging from telling my story 'from New York to Ningaloo' to being active in the wild writing sessions, sharing my poetry and supporting others into self-expression. However upon our arrival at our campsite in Cape Range National Park, where the smell of the ocean was permeating my aura and the knowledge that an exquisite fringing coral reef was hiding just beneath the surface of the ocean, I felt a tremendous energy surge through my body.

This energy was so great and encompassing that after we finished setting up camp, ate and everyone was either in bed or preparing for bed, I was wide-eyed. There was an extremely bright half moon, which was lighting up a pathway across the ocean and sand dunes to me (stairway to the moon). I found a spot on the dunes which cradled me and I sat down with my journal to think. I drew a picture of the moon, the clouds, the ocean and the dunes. I then wrote this poem:

Half a moon.  
Lighting up more  
Than half the sky.  
Seems foolish, as I think  
It's just for thy eye.  
But it is  
Relationship wills it to be.  
For I am thee and all are we.

My persona was transcending boundaries. I was seeing and feeling our connection with healthy nature, in a place that I had never been before, I felt comfortable. I felt grateful for this and I wanted to thank the Earth for allowing me the opportunity to live. I wrote the following in my journal log:

I want to tell everyone that I would like to have a moment with the group later on in the moonlight. I will explain that last night I had a meeting with the land, the ocean and the heavens. Then in story fashion I read,

"Angel came down from heaven yesterday. She stayed with me just long enough to rescue me. And she told me a story yesterday about the sweet love between the moon and the deep blue sea. And then she spread her wings high over me she said she's gonna come back tomorrow. And I said fly on my sweet angel. Fly on through the sky."

I explained that this messenger was the land, the ocean and the heavens. And right now I would like to say an earth prayer and then bless the earth.

"Gaia we are here fully in your presence. We are ever grateful that you have shared life with us. We understand that we are all one. It is within your cycle that we care to breathe."

I then asked for persons in the group to share their gratitude for Gaia that brings them peace, asking them to preserve this. They can either share this out loud or to themselves. When this was finished I asked them to in their own symbolic fashion to physically Bless the Earth. I placed my hands in front of me and touched my forehead to the sand, connection.

It was some time before I got the chance to trial the Blessing of the Earth again. I have done it a total of four times but I will just explain the experience in Walpole as a contrast. I had written notes for preparation in my journal log:

- I want to convey the thought that we are blessed to be alive. To be experiencing nature on its own terms.
- We have become detached from our sense of place distracted by our industrial consumerist world.
- We no longer understand the natural dynamics of the land where we are from.
- We have no totems or sense of place.
- However it is unique to note that through some treacherous times and techniques we have tried to acclimate indigenous cultures to our Western ways.
- But we cannot completely mute native people's connection with the land.
- So here we are at the moment with the opportunity to begin a new year and adventure of environmental citizenship and what better way to start than by thanking the Earth for having us.

This was the plan but how it actually turned out was much more beautiful and wholly organic.

We went on a two and a half hour bush walk through Nornalup National Park to Aldridge Cove. It was a magical spot that we arrived at and the experience of the walk was also awesome. During this time I had some of the best meditative land based experiences of my life; I experienced the heat, the movement of my feet, the torque of my body to avoid overhanging flora or to switch from one track to the other and the taking in of the magnificent landscape. It was so powerful. As we entered the cove a feeling of awe quickly overtook me. The energy of the ocean, the sun and the land were focused strongly within this cove. You could see it in the air the energy was visible.

We changed to our swim gear and I jumped into the ocean, swam a bit and then shuffled across some reef (it was shallow) to a sandy spot which led up to large rock outcroppings. I walked along them but began to get a chill from the breeze. So I then looked to the rocks for a dark coloured patch, which I knew would be real warm. I laid myself back against the warm rock and as I carefully rested my head down it fell perfectly into a nook, a resting spot. Through this nook I felt a sense of connection. It was a place in which a message of the Earth would be conveyed through me. As I lay there words came to mind about the magic of the spot, how lucky we are to be in this place, at this moment of serenity. I then thought about totems and how they might be used as a source for our wild writing. But mainly my thoughts were around the magic in the air.

I wanted everyone to slow down, feel the sand on his or her bodies, to listen, smell and feel the ocean and the land. I shared these thoughts with the group as we sat in a circle in the sand between the green bluff and the deep blue ocean. We blessed the Earth and I believe we were thankful for the experience as well as the Earth for the communication.

These are two of my four experiences of the Blessing of the Earth, as well as the events in my life that led up to this point. Throughout life I and many other people of similar backgrounds, have always been taught to be objective in our academic disciplines: to be rational and serve the greater good through science and technology. However, in my opinion this is not the solution; if it was ecological problems would be on the decrease and this is not the case. I return again to Stephen Jay Gould (1991, p. 14), "We cannot win this battle to save species and environments without forging an emotional bond between

ourselves and nature as well – for we will not fight to save what we do not love”. The Environmental Citizenship program through the Blessing of the Earth has taken this on board and we are working to redefine the role of love in relation to education and knowledge.

### **Ecological Citizenship:**

In this subsection I discuss what it means to be an ecologically rooted citizen and how MK might develop its Environmental Citizenship program to this deeper level.

Having gotten back from another wonderful program on the South Coast of WA where we set up camp in Walpole on the Nornalup Inlet at the Rest Point Caravan Park, I had a new theory and a new name clamouring in my mind - ecological citizenship. The program as it is currently known is the Environmental Citizenship program, but as we have progressed, it seems the program is more based around what it means to be an ecological citizen in the 21 century.

The lessons we have learnt in developing MK’s Environmental Citizenship program are the start, indeed the antecedent, of a more ecological conscientiousness. David Orr (1994) states that we need an “ecological concept of citizenship rooted in the understanding that activities that erode soils, waste resources, pollute, destroy biological diversity and degrade the beauty and integrity of nature are forms of theft from the commonwealth as surely as is bank robbery” (p. 168). I add the rhetorical question, “You wouldn’t rob a bank would you?” So why then do we so readily and without thought commit this ecological vandalism that no doubt undermines future prosperity and democracy alike? I believe it is because we are ecologically illiterate and are suffering on all levels from this plague of ‘cheap citizenship’ (Orr, 1994, p. 124).

The modern curriculum teaches little about citizenship and responsibilities, rather focusing on the concepts of individualism and rights. The state of the environment as it is currently has much to do with this self-centeredness. More people need to focus on the bigger idea of what it means to be a citizen. This can be related to the concept of interdependence: people are an inseparable part of the environment. We are part of a system that links individuals, their culture and the biophysical world of nature (Hungerford, Peyton & Wilke 1980; Huckle, 1988; Meadows, 1989). From the modern perspective this notion is difficult to understand. We find it hard to comprehend our citizenship in the biotic community, to truly get an inkling of our utter dependence on the “services of nature” much less our obligations to the wider community of life.

Too many of us believe that citizenship requires nothing of us, that it is a free pass. This is especially true to those of us born into first world countries. We have a penchant for the philosophy that technology will resolve our ecological malfeasance and ineptitude. Thus it does not come as a surprise that the governments we elect either deny that there is an environmental problem at all or are more inclined to cast doubt, confuse, obfuscate and muddy the water rather than critically analyse and clarify a complex issue. An analogy to this is that it is easier to make the mess than to clean the mess up.

Cheap citizenship is an oxymoron. Real citizenship is, sooner or later, less costly by far than dereliction and counterfeit citizenship. Unfortunately many of us are ecologically illiterate as citizens and our patriotism is disconnected from the tangible world and from our role as stewards of the land and of heritage and culture.

Many people experience themselves as powerless to make changes to problems that manifest on a global scale. However, many problems on the global scale that seem insurmountable are in fact manageable when viewed locally. One of the main problems is that national and international spheres are afforded too much of our attention and the local not nearly enough.

Through MK's Environmental Citizenship program we develop in the participants an understanding of the importance of place. This is done by relating to them the idea that we are tightly bound to the places that call to us; that the sense of wonder – the sheer joy in the created world – is healthy and something that we ought not be afraid to project. In Rachel Carson's (1984) book titled *Sense of Wonder* she writes, "it is not half so important to *know* as to *feel*" (p. 45). Feelings, she wrote, begin early in life in the exploration of nature, generally with the companionship of an adult. The sense of wonder is rooted in the trust that the world is, on balance, a friendly place full of interesting life "beyond the boundaries of human existence" (p. 88). MK is working on letting participants express their sense of wonder. I do not believe that it matters that currently most of the participants are young adults (18-25 years old). This is an effort at the re-education of all humanity. The issue is not at what age re-education starts; what is important is that it does start. As has been mentioned in the *Place-Based Education* subsection, MK is expanding this program to younger students as well. It is a movement towards flourishing as fully human creatures.

This movement of environmental awareness has grown out of the efforts of courageous people to preserve, protect and open other people's hearts and minds to the wonders of a healthy natural environment. Famous environmentalists that worked to protect a sacred



place are John Muir for Hetch-Hetchy, Marjorie Stoneman Douglas for the Everglades, and Horace Kephart for the establishment of the Great Smokies National Park. Through the MK program we look to introduce participants to people who have been utterly inspired and devoted their life to the environment: people such as John Woodbury whose campsite talk, after a year and half, still rings loudly in my mind. Gary Muir and the his family with their connection to the Walpole Nornalup region make tangible what we are trying to express through our *Sense of Place* work. Our experience on the North West Cape with local Aboriginal women Ann Preest and Maureen Dodd, as mentioned in *Guest Leaders and Valuable Words*, has been described by many of the participants as the most valuable part of their experience. To see these women is an inspiration. When you are welcomed to country and are given the O.K. to go out on their land, as opposed to just going out on your own, there is a sense of calm and acceptance by the spirits of the land on your journey, and this feeling resonates through the entire group experience. It feels right and that is the way we want it to feel.

As Garrett Hardin argues, problems that occur all over the world are not necessarily global problems and some truly global problems may be solvable only by lots of local solutions. Potholes in the roads, according to Hardin, are a big world wide problem, but they are not a 'global' problem that has a uniform cause and a single solution applicable everywhere (Hardin, 1993, p. 278; Hardin, 1986, pp. 145-163). Such a global problem would arguably be climate change. No community acting alone can prevent climate change; however much work can be done at the local level to awaken an understanding of what it means to act collectively for the greater good of humanity.

MK is taking on this challenge through the *Knowledge of Indigenous Species, Benefiting the Community* and *Affinity with Nature*. In all these areas we are looking to raise the awareness of participants to the power of activating a program of ecological citizenship within the local community. This can lead to a "place-focused economy" as defined by Daniel Kemmis (1990):

The capacity and the will to keep some locally generated capital from leaving the region and to invest that capital creatively and effectively in the regional economy (p. 103).

On one Odyssey we discussed the wind farm in Albany as an example of a place-based economy.

Ecological citizenship requires activism; as John Dewey (1954) observed democracy “must begin at home and its home is the neighbourly community” (p. 123). Through the Environmental Citizenship program we are bringing back the focus to what it means to be fully human; challenging the pre-eminence of the market and its unquenchable thirst for growth. David Orr (1994) further elaborates on this:

People need, among other things, healthy food, shelter, clothing, good work to do, friends, music, poetry, good books, a vital civic culture, animals and wildness. But we are increasingly offered fantasy for reality, junk for quality, convenience for self-reliance, consumption for community and stuff rather than spirit (p. 167-168).

Through the Environmental Citizenship program we work to foster largeness of heart and spirit: MK’s *Wild Writing* and *Blessing of the Earth Ceremony* work to reconnect in us that spiritual domain and sense of the sacred.

To be an ecologically minded citizen of this world we must be mindful that while it is important to think on a global-scale our vision should not become blurred about what happens to real people in specific settings. We must refrain from what Alfred North Whitehead called the “fallacy of misplaced concreteness” ([http://en.wikipedia.org/wiki/Fallacy\\_of\\_misplaced\\_concreteness](http://en.wikipedia.org/wiki/Fallacy_of_misplaced_concreteness), 2006-08-18) in which we take our models for reality as reality itself, equivalent to eating the menu, not the meal. I believe that this concept resounds through the entity that is MK. MK was founded more than ten years ago as a grass roots environmental youth organization with aims to care for the local environment. The empowerment of young people in their pursuit of a healthy local environment has carried MK into the global arena. MK now operates in Canada, South Africa and Indonesia. These affiliates have all come to MK through different avenues and realized that empowerment of the youth is the path towards a robust natural environment through ecological citizenship.

They all operate on separate local agenda, but combined they are working at a global level. MK is preparing the youth of today to take the world that sustains us seriously. Over the long run these ecological citizens will learn to pay careful attention to the patterns that connect the local and the regional with the global. This stewardship of our planet will sustain our future.

Ecological citizenship is rooted in the idea of place. The work that MK is doing through their Environmental Citizenship program is the necessary step in turning the tide. However there is still much work to be done on a much grander scale. The globalising agenda or Western development has conspired to abolish our places. As David Orr (1994) states:

In contrast to 'dis-placed' people who are physically removed from their homes but who retain the idea of place and home, we have become 'de-placed' people, mental refugees, homeless wherever we are. We no longer have a deep concept of place as a repository of meaning, history, livelihood, healing, recreation and sacred memory and as a source of materials, energy, food and collective action (Orr, p. 163).

It is ironic that Indigenous peoples, for so long barely recognized by the Western world as people, will help us re-ignite the connections of our hearts and spirits to the Earth. Australian Aboriginal people believe as Robert Lawlor (1991) states that, "the spirit of their consciousness and way of life exists like a seed buried in the earth" (p. 6). For the past 500 years waves of Europeans have sequestered this seed deep beneath the surface. People such as myself and groups such as MK together with Aboriginal people such as Maureen Dodd and the Elder custodian of the North West Cape Mr. Syd Dale, are once again watering the ground for this seed, making the soil moist and rich for its reawakening. We, like the soil are enriching ourselves with the notion of the importance of particular places and like the seedling that bring its plumule to the surface while at the same time securing its roots, we are learning to do the same. A contemporary Aboriginal poet expresses this idea in a poem.

## My People

A race of people who rose with the sun,  
As strong as the sun they had laws,  
Traditions coexisting with nature.  
The cycle of the sun is likened to the life of man;  
The snake is said to bite when the sun is at its most powerful zenith.  
The snake has already bitten,  
When the snake bites the sun,  
The clan, the man, the sun,  
Must sink cooling to its inevitable settings,  
Yet, it is said, the sun will rise again.

Albert Barung (Lawlor, 1991, p. 8)

I believe that an Ecological Citizen must understand this reawakening. A pilgrimage must be taken for this seed of understanding to germinate. For like the sun, the seed, is a universal symbol of growth, death, dormancy and inevitable rebirth. MK's Environmental Citizenship program is an intricate part of this process. We aim to be the droplets of water that gradually rehydrate the seed, one by one. We will nourish this seed as it swells, cracking the surface above as it splits apart, we will be there as the tender first shoots appear; just as it is taking care to secure its roots, so will we, the seed will then unfurl and make its way to the surface, bursting through to the light and we will be there to celebrate the reawakening, as Ecological Citizens.

## Chapter Four - Marine Education Centres:

Through the first three chapters and more specifically in chapter 3 I have taken the reader into my world and the experiences that I have had in the realm of ecological citizenship. I have done this because living and learning are synonymous to me. There is no way that I would have been able to write this thesis if I did not take the time to immerse myself in MK's Ecological Citizenship programs.

The next step in this thesis is to examine Marine Education Centres with a view to learning what is already happening on the ground with marine ecological education. I want to integrate what I learned with MK with what can be learned from researching existing marine education.

I studied seven marine education centres in Australia, New Zealand and the United States. These centres were chosen because I saw them as representative of a range of initiatives taken in the aim of educating about the marine environment. I used information from internet sites and I interviewed centre managers by email and by telephone.

I aimed to identify which aspects of these centres could be useful in developing a proposal for an Eco-Camp in Western Australia. I studied each centre individually and learned what these centres did best, and how. To better manage the information I developed an organizing matrix (see appendix #1 *The Matrix*). This matrix was a means for me to gather consistent information sets around specific categories that I thought would be useful in developing ideas for my proposed Eco-Camp.

The seven centres that I have researched all aim to increase awareness and understanding about the marine environment. The Marine Education Centre at Island Bay describes their primary objective as to “promote interest in, increase knowledge and understanding of and encourage protection, enhancement and enjoyment of local, national and global marine environments through public education programs, live displays and community initiated research and service projects” (Island Bay, *Introduction*, 2005-03-24). This statement reflects the general aim of the seven centres that I have researched. They are all in some way aiming to promote conservation of the marine environment through sustainable education practices.

The centres that I have studied are:

1. The Marine Education and Recreation Centre TE WHARE O TANGAROA (MERC) located in Long Bay, New Zealand;
2. Island Bay Marine Education Centre located in Island Bay, New Zealand;
3. The Marine Discovery Centre located in Woodbridge, Tasmania;
4. The Marine Discovery Centre Bondi Beach located in Queensland, Australia;
5. The Marine Discovery Centre Queenscliffe located in Victoria, Australia;
6. The Marine Discovery Centre Adelaide located in South Australia;
7. The Ocean Institute located in Dana Point, California.

Education for marine sustainability is in its infancy but is rapidly evolving. Of the education centres that I have studied the two oldest are the Ocean Institute in Dana Point, California that opened in 1977 and the Marine Discovery Centre (MDC) in Queenscliffe, Victoria that has been operating for 22 years, since 1983. The other centres studied opened in 1990, or later and the Ocean Institute had a major revamping (name change, redevelopment) and reopened in 2002.

Many of these centres have come into existence through one person's or a group's perseverance over time and despite many obstacles. Embedded within these centres studied is often a personal story about the origin of the centre. I present these stories with the aim of showing the role of inspiration and drive needed to make an idea a reality. These personal stories are not the same as the formal history of the centre though I sometimes present the two accounts together.

Information that I have gathered has been categorized in three sections, Ethos, Education and Public Relations. Within these sections are subsections.

### **Ethos:**

Ethos is the first section that I will discuss. It incorporates the subsections: Vision, Mission Statement, Primary Objectives, Beliefs, Sustainability, History, Personal Dimension, Overview and Future. I use 'Ethos' to mean the elements that define each centre's understanding of itself. To describe where each centre has come from, where it is presently at and where it intends to be in the future; is the intent of my account.

### *Vision:*

When developing a Marine Education Centre, proponents have to generate an ideal for the centre. This ideal is termed the 'vision'. From the seven centres studied I recorded four vision statements. Other centres give hints as to how they aspire to be recognized but do not explicitly express them. The Ocean Institute gives a very clear and ambitious statement, "Our vision is to be the world's best experiential ocean educational organization" (Ocean Institute, *About the O.I.*, 2005). The MDC in Adelaide gives a more descriptive statement, "A Marine Discovery Centre with models, activities aquariums, trails and experiments that are innovative, interactive and exciting" (MDC Adelaide, *About Us*, 2003).

The vision is one of the first concepts that are taken note of by visitors and potential visitors. I believe that a vision is of worth for the Eco-Camp. Words must be chosen wisely. The purpose is to create a mental image of what the Eco-camp is planning to achieve and to intrigue those that read the vision to further investigate the Eco-Camp.

### *Mission Statement:*

In most cases the vision leads to the mission statement. The mission statement is the definitive statement describing the purpose of the centres existence. All the centres' that I have studied except for Island Bay have a mission statement. The Centre at Bondi Beach has adapted their mission as: "Changing the way we look, feel and act towards our precious marine and coastal environments – achieving conservation through entertainment, education and collaboration. Bringing the Underwater Wonders of Sydney to the World" (Bondi Beach, *Info*, 2005). The Marine Education and Recreation Centre have as their mission statement: "MERC is committed to providing opportunities for personal growth and development through experiential marine related activities and studies (Board of Trustees, MERC 1990) cited from (MERC, *Strategic Plan and Vision*, 2005).

As is the case with the vision the mission statement is a single statement that holds a good deal of weight. The statement must be simple, succinct and to the point. The mission statement for the Eco-camp will show how the camp will support and enable its vision.

### *Primary Objectives:*

Primary objectives identify what the centres specifically aim to achieve. The primary objectives outline the ways in which the centre is aiming to educate people through

understanding and appreciation of the marine environment. The objectives should clearly map out how the mission statement will be accomplished. They immediately let the inquirer grasp the substantive roots of the centre. Six of the seven centres studied have listed their primary objectives. The Marine Education and Recreation Centre (MERC) in New Zealand have defined their primary objectives as follows:

1. To encourage sensitivity and appreciation of the sea and related environments;
2. To develop knowledge of water safety leading to skill development and safe enjoyment of water based pursuits and recreational activities;
3. To increase the confidence and self-esteem of individuals and foster teamwork and cooperation;
4. To develop an understanding of Maori and Pacific Island culture, values and heritage in relation to the sea;
5. To teach marine ecology and conservation.

(Board of Trustees, MERC 1990) as cited (MERC, *History*, 2006-02-15)

These objectives cover spiritual, physical, cultural and intellectual aspects of human awareness; that is they encompass the education of the whole person. Also, the objectives follow and fulfil the previously mentioned MERC mission statement, which is important to the logic of the strategic plan.

The MDC at Woodbridge in Tasmania list their primary objectives:

1. Provide quality educational marine-based programs for students that visit the Centre;
2. Link all courses at the Centre to the National Curriculum guidelines and the Essential Learnings;
3. Provide professional development for teachers statewide, together with other agencies, which as well as training for use of the Centre, encourage the integration of marine activities and resources into the curriculum;
4. Provide opportunities for authentic learning by linking scientists involved in research with Marine Discovery Centre programs;



5. Promote the temperate marine environment by participating in community events and conferences;
6. Allow equitable access to our programs by running travel programs in North and North West regions and School Holiday Programs.

(Foster, *personal communication*, Nov. 28, 2004)

Woodbridge was developed by a high school that wanted to create its own MDC, which explains the lean towards education. The focus here is on the 'how' of education rather than the 'what'.

Another approach is provided by the MDC at Bondi Beach. These objectives are for a centre located at a very popular beach within the city of Sydney, which is the second largest city in Australia. The objectives of this centre take on the needs of a big city. They are varied and all-inclusive of the sections necessary to facilitate marine education:

1. Provide action-orientated environmental education about, in and for the marine and coastal environment;
2. Improve community understanding of and involvement in, marine and coastal related issues;
3. Facilitate educational exchange between bodies managing our marine and coastal areas and the public;
4. Redress the balance between the land-based focus of environmental education and the reality of Australia's predominantly coastal-dwelling population;
5. Provide a vibrant network hub for the marine and coastal community in the Sydney area;
6. Establish a world-class, hi-tech, regional marine environmental education centre in the Bondi Pavilion.

(Bondi Beach, *Info*, 2005-03-05)

This centre is designed for the general public rather than solely or primarily for school children so it is broader in its objectives. At the moment of writing, the Marine Discovery Centre at Bondi Beach is in the process of a major revamp to the facility at the Bondi Pavilion. With this upgrade they are well on the way to fulfilling the set objectives.

The primary objectives of the Eco-camp will follow on and elaborate upon the vision. It is also essential that the primary objectives encapsulate exactly what it is that the centre is aiming to accomplish.

*Beliefs:*

This subsection relates to the attitudes, values and philosophy that underlie the centre's modus operandi, as well as the centre's ultimate inspiration, the ocean. Beliefs are essential to Island Bay's self expression: "Dr. Anderlini and Ms. Hutt believe that education is the best long-term environmental management and conservation strategy available. They strongly believe that the best means of promoting the conservation of Wellington's and New Zealand's marine heritage is through public education programs and community activities which foster public awareness of issues affecting local, national and global marine environments" (Island Bay, *Introduction*, 2005-03-24).

Woodbridge MDC has listed sensory experience as a part of their belief system. "The guiding thought during the initial establishment of the centre was the students could 'hear the sea, see the sea and touch the sea'" (Foster, *personal communication*, November 28, 2004).

I believe it is important that the centres make explicit their belief systems and that this communicates a deeper love and kinship with the ocean. This will certainly be a recommendation for the Eco-Camp that I am proposing in my final chapter. The power of a belief system should flow through every dimension of the Eco-Camp.

*Sustainability:*

The term 'sustainability' has brought me to pause and think many times, about where and how it belongs in my thesis. It is in a sense, all-inclusive; it is the crux of my research; and ethically speaking it is the foundation for my morality. It will be used twice as a subsection in two different sections. Here in the Ethos section it is used to convey a sense of an overarching framework that is at once practical, ethical and fully holistic. The MDC in Adelaide has these concepts in mind. The centre at its current location, housed in an old cottage by the seafront at the Star of the Sea School at Henley Beach, cannot keep up with demand, so it is looking to expand its capabilities to deliver a quality marine educational experience to all school children, community members, groups and international visitors.

The centre has engaged architects to develop an initial concept and design for a major expansion. The proposed new centre will double the capacity of the current centre and at the same time provide a facility that promotes environmentally sustainable building practices and cheaper individual costs for students attending. The building itself will be an 'iconic environmental structure' for South Australia, incorporating world's best practice, environmentally sustainable design and building practices and would include:

- An exemplary learning environment for marine studies;
- Awesome temperate marine aquaria with low energy cooling system;
- Maximum use of daylight and ventilation;
- Return of stormwater to aquifer and minimal water use;
- The use of alternative energy systems;
- A multi-storey design maximising the views of Gulf St Vincent.

Marine Discovery Centre, Director Tim Hoile states, "the specific goal will be to have a purpose built marine centre incorporating facilities that can adequately cater for 2 classes per day. This would enable the Centre to double its educational service and cater for over 12,000 students each year. The new MDC would then be able to meet the current demand. The Centre would become an iconic environmental building in South Australia. *The important environmental and conservation messages taught from inside will be reflected in the building itself.*

(MDC Adelaide, *Proposed Building*, 2005-09-22)

This concept for a centre has the necessary ingredients to promote sustainability. The last sentence, which I italicised, is the essence of what I mean by sustainability in this application. The idea promoted here is of holistic thinking and its importance should not be overlooked.

In contrast to Adelaide's vision for their new centre is the newly established Ocean Institute (OI) in Dana Point, California. The harbour in which the institute was built is now a far cry from the natural cove it used to be. Dana Point, California is named after author Richard Henry Dana, who, in the late 1800's wrote the classic American novel, "Two Years before the Mast"; a book which is still required reading in many American schools. Dana called the high bluffs and sheltered coves of this area the most beautiful spot on the

California coast. Pioneering surfers thought so too, as they surfed the many beach breaks along this rich coast. Dana Point was also once home to a very special wave, one of the best point breaks in southern California. When not surfing, the watermen that called this place home spent their time lobstering, fishing and abalone diving. Tragically, this wave was mostly destroyed in 1966 when the Dana Point Harbour was built. A giant breakwater cuts right through the heart of the cove. Behind this breakwater now lies the Ocean Institute. It is not the fault of the institute that the breakwater was built and I am happy that it is there, rather than a power plant, which too frequently are present along the Southern Californian coast. However, there is no recognition in any of the centre's work to acknowledge the coast as it was beforehand.

OI has also missed a chance to be recognized on a more important level. The centre in its present form broke ground on March 28, 2001 and had its grand opening mid-2002. They were funded \$16.5 millions dollars for its construction, yet there is not *one* mention of sustainable design. The US Green Building Design was founded in 2000 and with this came LEEDS; Leadership in Energy and Environmental Design Green Building Rating System is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings (US Green Building Council, *Why Build Green*, 2006-02-01). In the United States, buildings account for:

- 36% of total energy use / 65% of electricity consumption;
- 30% of greenhouse gas emissions;
- 30% of raw materials use;
- 30% of waste output / 136 million tons annually;
- 12% of potable water consumption.

(US Green Building Council, *Why Build Green*, 2006-02-01)

Breakthroughs in building science, technology and operations are available to designers, builders and owners who want to build green and maximize both economic and environmental performance.

Environmental benefits include:

- Enhance and protect ecosystems and biodiversity;
- Improve air and water quality;
- Reduce solid waste;
- Conserve natural resources.

(US Green Building Council, *Why Build Green*, 2006-02-01)

Economic benefits include:

- Reduce operating costs;
- Enhance asset value and profits;
- Improve employee productivity and satisfaction;
- Optimise life-cycle economic performance.

(US Green Building Council, *Why Build Green*, 2006-02-01)

Health and community benefits include:

- Improve air, thermal and acoustic environments;
- Enhance occupant comfort and health;
- Minimize strain on local infrastructure;
- Contribute to overall quality of life.

(US Green Building Council, *Why Build Green*, 2006-02-01)

It would have been a very significant statement if the Ocean Institute chose to build in sustainable manner. It is something that must be considered for all building ventures most especially those linked with the betterment and education, through stewardship, of our world.

The way in which you present your centre is of vital importance. From reading and learning about this issue through the above research I have determined that it is essential that any building or development must reflect the environment and the conservation messages that it is being brought forth to promote.

### *History:*

When researching each centre I always encountered a story of how the centre came to be where it is, at the present: the history of the centre. The story of the MDC at Island Bay demonstrates the level of commitment and the diversity of talents and tasks required to bring a centre to fruition. The idea for creating the Island Bay Marine Education Centre first occurred to Dr. Victor Anderlini and Ms. Judy Hutt in 1994 when Anderlini sought and received a substantial grant to conduct research on the aquaculture potential of surf clams on behalf of a Maori fisheries cooperative from the Wellington West Coast. In order to be able to undertake this research at the Island Bay Marine Laboratory, Anderlini had to initiate extensive renovations to the laboratory's then dysfunctional seawater system and other facilities. As the renovations were being carried out Anderlini and Hutt (the project's algal/culture specialist) envisioned creating a "Marine Education Program" at the laboratory for schools, and social groups and for the general public (Island Bay, *Background*, 2004-10-11).

As described above the primary objective of their proposed program was to eventually develop a non-profit "Marine Education Centre" which would foster marine conservation through the education of pre-school and school-aged children and the general public. They envisioned the 'Centre' as a living showcase for local marine animals, a home for their Marine Education Program, a venue for encouraging and exhibiting the works of local artists who were inspired by the South Coast environment and a forum for presenting diverse perspectives on local, national and international issues affecting the marine and coastal environment. They saw the new 'Centre' as a community resource, which would respect and reflect the Wellington South Coast's historical, cultural, artistic and scientific uniqueness (Island Bay, *Background*, 2004-10-11).

Anderlini and Hutt began to realize their vision by transforming an unused section of the Island Bay Marine Laboratory into a facility that would allow the public to get a close-up view of the variety of marine life that lives along Wellington's South Coast. Initially, they rebuilt available unused aquaria and, as the seawater system was improved, they constructed a series of live exhibits that simulated local marine habitats such as rocky shores, wharf pile communities and sandy beach environments. They begged and borrowed posters, displays, and other educational resources from local, and national government agencies and sought donations of funds and building supplies to enable them to create a unique venue for learning about the marine habitats and inhabitants of the Wellington South Coast (Island Bay, *Background*, 2004-10-11).

All the live marine animals initially on display (most of which are still alive or are descendants of the original collections) were either collected by Anderlini and Hutt from the Wellington South Coast or were donated by local recreational and commercial fishers, school children and interested individuals. These exhibits were opened to public view for the first time during the 1996 Island Bay Festival and proved to be extremely popular with both local and out of town residents. Contact with local science teacher associations and schools eventually led to a large number of schools wanting to make bookings to come and visit the Laboratory and to attend the fledgling “Marine Education Program” (Island Bay, *Background*, 2004-10-11).

The Marine Education Program’s facility was also the focal point for the 1996 SEAWEEK activities in Wellington when over 1000 visitors viewed the Marine Education Program’s live marine displays and attended public talks at the Laboratory during the weeklong celebration. The overwhelmingly favourable response of the public to their live exhibits, and to the personal and knowledgeable way they presented information about the habitats and habits of the marine life on display, encouraged Anderlini and Hutt to open the exhibits to the public on the first weekend of every month. From February 1996 until recently, approximately 160,000 pre-school and school-aged children and adults have participated in the Marine Education Centre’s public education and Open Weekend programs (Island Bay, *Background*, 2004-10-11).

This is an inspiring account of how the centre got to be where it is today. It is the creativity and tangibility of their centre that draws me to the work being done at Island Bay.

The Ocean Institute presents a less personal outline of their history. Founded in 1977, the Ocean Institute is a non-profit organization dedicated to ocean preservation through education. “The original 6,000 square foot Ocean Institute facility was operating at full capacity for several years,” explains Dan Gee, president of the Ocean Institute. “To accommodate the present and future demand for educational programs that are linked to California State Content Standards and to support the growing need for scientific and technological studies, the Ocean Education Center (OEC) has been constructed. The 34,000 square foot facility is a model for future interactive environmental education programs throughout the world: while continuing to promote ocean awareness and understanding” (OI, *About Us*, 2006-02-10).

The Ocean Institute describes itself as follows:

The Ocean Institute is a laboratory for the creation, testing and dissemination of new ideas, strategies and technologies for teaching and learning as they relate to the environment and coasts. It is a leader, serving as a resource to museums, school districts, teachers and others who seek to enhance and strengthen their educational programs. The curriculum available through the Ocean Institute programs crosses all traditional disciplines, but draws heavily from history and the sciences using content derived from the ocean.

The Ocean Institute was established as the Orange County Marine Institute by a Joint Powers Agreement (JPA) adopted on July 12, 1977. The JPA included the County of Orange, the Orange County Department of Education, Saddleback Community College District, Rancho Santiago Community College District, North Orange County Community College District and Coast Community College District. The agreement was redrafted to include the City of Dana Point as a member entity in 1992.

In September 1996, the Board of Directors transferred the assets and operating authority to a 501 © (3) non-profit organization known as Friends of the Marine Institute in Orange County. In November 1999, the Board voted to change the name of the organization to Ocean Institute.

In July 1999, the Ocean Institute signed a new 35-year lease with the County of Orange for 2.4 acres in Dana Point Harbor. On March 28, 2001, the Institute broke ground for a \$16.5 million Ocean Education Center with the capacity to educate 135,000 students each year. This new facility will open in mid-2002.

Landmarks in the history of the Ocean Institute include the historic *Brig Pilgrim* acquired in 1981, with its mooring built in 1994. The *R/V Sea Explorer* was purchased in 1994 and the historic Maritime Center was constructed in 1997. The topsail schooner *Spirit of Dana Point* was purchased and christened in 2001.

(OI, *History*, 2006-06-29)

The Marine Education and Recreation Centre (MERC) in Long Bay, New Zealand, present an intermingled interpretation of history and the personal dimension, discussed further in the next subsection. MERC has been in operation since 1990; its beginnings were in 1978. Since then, thousands of hours of voluntary work have gone into getting MERC to where it



is today. This voluntary effort still continues and has been valued at between \$40,000 and \$50,000 per year (MERC, *About Us*, 2006-06-29).

MERC was the brainchild of David Gray, physician and yachtsman; John Orams, pilot, yachtsman and musician; Laurie Baxter, school principal, outdoor education enthusiast and orienteering contestant; and Don St. Clair Brown, businessman and yachtsman. In 1978 these men found land on the North Shore of New Zealand's largest city, Auckland. They believed that this area would be an ideal site for the establishment of a learning, research and recreation centre that would be based primarily on aquatic related activities.

Their enthusiasm quickly gathered together businessmen, university lecturers, teachers, sports people and aquatically minded supporters. A registered charitable trust was soon formed. The trust then conducted a survey of 242 organizations in 1983, which revealed a demand for organized education in marine activities. This survey also revealed a demand for qualified instructors and live-in facilities for a broad range of age groups and organizations (MERC, *About Us*, 2006-06-29).

In 1985, Colin Spanhake, the Trust Board Chairman broadened the vision even further and set up a campaign to launch a "University of the Sea, the First in Australasia". A large fundraising drive was initiated for this purpose. The Board needed a total of \$2 million overall but set an initial fund raising goal of \$500,000. This drive continued for approximately eighteen months, but when financial goals could not be met, the Board put the project on the back burner.

Time ticked on and fundraising continued. By 1988 the Board realized that it must get buildings up and running otherwise the whole idea would lose momentum. At this time they concluded that the present management structure was no longer running as efficiently as it could be, so the decision was made to change the structure. The Board of Trustees continued in their role and also took on the duties of the Management Committee, thus merging and forming only one body. Sub-committees were then set up under this new amalgamated system. There were to be a maximum of twenty trustees and a minimum of twelve.

In March 1990, the twelve-year-old vision was finally realized with the opening of a multipurpose outdoor centre at Long Bay, Auckland. The Centre incorporates accommodation, kitchen and dining facilities suitable for groups of up to 50 persons.

From reading through the different recorded histories of the centres that I studied I realized that any effort into this area will have to be whole-hearted. It can also be noted from the above reading that these centres all aim to bring the sea to the participants. In my proposal for the Eco-Camp I aim to bring the participants to the sea and then take them into the sea. I aim to immerse them in the marine environment, learning its ecology, feeling its rhythm.

*The Personal Dimension:*

The personal dimension deals with the development of each centre. It allows insight into the hearts and minds of individuals, groups, organizations, or committees that initially sparked and nurtured the idea for these centres, seeing them through to completion. A study of the personal dimension can throw light on the hardships, plans gone awry and personalities of the proponents. A good example of the personal dimension of the establishment of a centre comes from Island Bay. A look into the lives of the two founders of Island Bay leads to a much greater understanding of the centre:

*Dr. Victor Anderlini (Co-Director):* [This information was gathered through email, mail, and information available on the web.]

Anderlini has been a marine research scientist for almost 30 years and has designed and directed multi-disciplined, marine research projects in California, Mexico, Antarctica, Africa, Europe, the Middle East and Asia before coming to New Zealand to complete his doctoral degree. He has acted as a consultant Marine Pollution Ecologist and Marine Environmental Specialist for the IUCN/WWF and UNEP in the Sultanate of Oman and for the Asian Development Bank in the Philippines, Indonesia and China. He has been responsible for designing, directing and managing contract research projects for many years and has an international reputation with scientists and administrators both overseas and in other regions of New Zealand. During the 1990's Anderlini assisted a Maori hapu from the Wellington West Coast explore the harvesting and aquaculture potential of surf clam resources in their area.

*Ms Judy Hutt (Co-Director):* [This information was gathered through email, mail, and information available on the web.]

Hutt attended Victoria University of Wellington before moving to Sydney where she pursued a career in the legal profession and as joint owner of a highly successful manufacturing business. She returned to New Zealand in 1989 and joined the legal department of Te Puni Kokiri. She became acquainted with Anderlini in 1995 as Research

Assistant on the Surf Clam Aquaculture Project and has been responsible for the establishment and operation of the Algalculture Laboratory at the Marine Education Centre since that time. She was also responsible for providing basic algalculture training to Maori staff working on the surf clam projects and has initiated a very successful seahorse breeding/rearing project at the Centre.

Anderlini and Hutt are the Island Bay Marine Education Centre's directors and sole staff. Hutt and Anderlini share responsibility for the development of teaching resources, the ongoing maintenance and operation of the Centre and for delivering the school visit programs. They do everything at the Centre including developing special needs courses for the physically and mentally disabled, designing and constructing new displays, writing proposals and reports for funding agencies, developing teaching resources, teaching visiting school groups, hosting pre-school, social and service groups, maintaining the extensive live displays, as well as doing the day to day general cleaning up.

The Centre's Marine Education Program is also implemented solely by Anderlini and Hutt, who now not only teach over 18,000 school-aged children, pre-schoolers and adults who book visits to their facility annually, but continue to host a once-a-month Open Weekend for the general public which requires them to devote one weekend every month to the program.

Maintenance of the extensive live habitat displays is a seven day a week job which requires Anderlini and Hutt to be at the Centre every day to ensure the health of the marine life on display as well to prepare for and provide the education program to the public in one hour and one and a half hour sessions. In addition, they must also maintain the orderliness, cleanliness and general repair of the outdoor facilities and the Habitat Display and Lecture Rooms before, during and after booked sessions and Open Weekends since funding for cleaning and technical assistance is not available.

This type of an in-depth look at the skills behind the founders of the Island Bay Marine Education Centre is invaluable. It allows us to understand on a more personal level, the strength of conviction towards the establishment of a centre. This allows an insight, for those who are interested in following this path of education, into the range of skills necessary to successfully run a centre.

*Future:*

This is the last subsection within *Ethos*. It deals with the centres set agenda and goals for forthcoming years: their plans for the future. Plans are helpful as they focus on looking forward, keeping up with the times. Plans help as a means of fund-raising, goal setting and continued improvement. If you have a written goal that you are working towards, it is almost always a positive thing. The future for the MDC at Adelaide was previously mentioned within the sustainability subsection in terms of their concepts for a new centre. The MDC at Bondi Beach is also in the process of realizing a major future goal.

A high quality internal re-fit has just begun to create an exciting new visitor centre at world-famous Bondi Beach - the Marine Discovery Centre Bondi Beach.

Due to open in early 2006, the Centre is located in the southern wing of the Bondi Pavilion and is operated by a not-for-profit environmental education community organization.

After several years of planning and securing grants, we believe the Centre will be an excellent vehicle for achieving our mission of educating for conservation – in the most entertaining way possible - to the very large audience that comes to beautiful Bondi Beach every year.

(MDC Bondi Beach, *Design & Concept*, 2006-02-21)

The Marine Education Centre at Island Bay has always been a hotbed for futuristic initiative. From its inception, it has been Anderlini and Hutt's vision to create a unique, purpose-built, self-supporting, non-profit Centre on the Wellington South Coast that would respect, reflect and protect its seaside location. Therefore, in 1999 they established the Wellington Marine Conservation Trust to undertake the task of realizing their vision. The proposed Wellington Marine Education Centre and Aquarium of New Zealand would include facilities for an expanded Marine Education Program, larger live habitat displays feature marine life from Wellington's marine environment; and a small aquaculture research and training facility.

The proposed Centre's expanded Marine Education Program facilities, its larger realistic live, local habitat displays and seaside location will mean that many more school groups will be able to safely participate in the Centre's rocky shore and other marine conservation programs and projects. The Centre's facilities will also allow the public to participate in a

wide variety of educational opportunities including evening and weekend lecture dinners, films, video presentations, field trips and eco-travel programs. The Centre will have an extensive marine science library and on-line computer linkage to Crown Research Institute databases, which will allow students to carry out projects. It is anticipated that the Centre will also operate an after-school and school holiday program, which will be available to all school age children for a nominal charge (Wellington Marine Conservation Trust, *Aquarium of New Zealand*, 2006-07-19).

As a non-profit, charitable organization, the Trust plans to financially support individual, group and community-based social, cultural, historical, artistic, or scientific projects, which increase knowledge of, enhance, or protect Wellington's coastal environments.

Very recently the Trust has made huge steps to realize these plans. The Wellington Marine Conservation Trust has turned the corner and now is fully engaged with opening the Wellington Marine Education Centre and Aquarium of New Zealand. (For details see their website [www.aquariumnz.org.nz](http://www.aquariumnz.org.nz).) The entire vision is of central relevance to my own vision of the future of sustainable marine education. It is a prime example of what can happen when the wonders of the marine environment are shown to the public in a loving educative manner.

Further plans include:

- An aquarium show-casing the unique marine environment and resources of the Wellington region and the rest of New Zealand;
- A regional coastal plant reserve and public recreation area;
- Marine education programs and aquaculture training courses;
- Aquarium animal husbandry and marine conservation research in conjunction with partner organizations;
- Public recreation amenities.

(Wellington Marine Conservation Trust, *Aquarium of New Zealand*, 2006-07-19)

The new Centre will provide a regional base for the long-term protection and enjoyment of the Wellington region's coastal environments and its extensive marine resources.

*The Monterey Inspiration:*

The Trust's inspiration for the Wellington Marine Education Centre and Aquarium of New Zealand is California's non-profit Monterey Bay Aquarium, which combines a high-quality tourist attraction with public education.

The Monterey Bay Aquarium is the top tourist attraction in the area and the principal reason many people visit the Monterey region of California. Of the Aquarium's 1.7 million visitors in 2003, 44% were first time visitors to the area. Monterey Bay Aquarium has set the standard by which public aquariums are judged. It is ranked the top North American aquarium and the third most highly rated family attraction in North America.

Its success can be attributed to its points of difference from other aquariums:

- It focuses on the marine life of a single region;
- It is the first aquarium to focus primarily on ocean conservation;
- It provides dramatic, habitat-themed exhibits.

(Wellington Marine Conservation Trust, *The Monterey Inspiration*, 2006-07-19).

The proposed Wellington Marine Education Centre and Aquarium of New Zealand, with the inspiration, knowledge and encouragement of the Monterey Bay Aquarium, will offer a unique experience of the coastal and marine biodiversity of the Wellington region. For the people of Wellington and visitors to the region, the Centre will provide an extension of the human and natural history of Wellington and New Zealand that are seen at New Zealand's national museum, Te Papa and at the Museum of Wellington City and Sea.

The plan for the future of an establishment namely the Eco-Camp that I am proposing, must be clear and dynamic. It can be seen from the above description of the Island Bay experience that something small, such as the initial establishment of Island Bay, can lead to something huge, such as the Wellington Marine Education Centre and Aquarium of New Zealand. This can be achieved through proper planning and thought for the future.

**Education:**

In this section I am looking at how those experiencing the centre are taught. I cover the subsections of: Educational Philosophy, Educational Models, Community Initiatives and Projects, Facilities / Learning Environment, Sustainability, Educational Programs and Activities and Vessels.

### *Educational Philosophy:*

This is a look into the educational experiences that are offered at these places of learning and the philosophies that are embedded within them. They range from concepts of stewardship to interactive learning.

### MDC Victoria:

The MDC at Victoria has a philosophy of stewardship in which they aim to provide the highest standard of curriculum-focused education activities to the majority of Victoria's schools. They also cater to many interstate and overseas groups seeking field-based learning in biology, environmental science, outdoor education activities as well as other areas of learning.

The location of the MDC is ideal. It is in Queenscliff, which is just a half hour from Geelong. The MDC is surrounded by Victoria's greatest diversity of coastal habitats, enabling the MDC to teach about the environment from the environment. How better to learn about the world-class marine life and the unique relationship with these places than immersed within it?

“We understand that experiential learning and the development of attitudes go hand in hand and that hands-on (and feet-in!) experiences are among the most powerful ways of learning. Accordingly, all our sessions include opportunities for students to interact with live animals in a variety of settings.”

(Educational Services Packet, pg 2)

The MDC has a qualified and experienced teaching staff, with educational backgrounds ranging from marine biology, ecology, outdoor education and environmental interpretation. The centre believes that all students deserve the best possible assistance with their learning and with the above backgrounds and prime locale this goal does not seem too ambitious.

The MDC has nearly 20 years experience in providing safe, relevant and exciting activities for students of all ages. The MDC is now an integral part of the education experience of most Victorian students. Best of all, the MDC provides students with experiences that are impossible to reproduce in formal settings that add so much to their formal learning. This means that students are able to learn in and from the natural environment and take back to the classroom what they have learned, applying these lessons in their classes. Drawing

schools into your activities' network by providing accreditation to the lessons being learnt is a key to popular success.

#### Island Bay:

Island Bay first acknowledges the simple fact that educational experiences must be interesting as well as informative in order for the students to “get the message”! It was with this insight that the entire facility was designed. The aspiration is to capture the students' minds and stimulate an interest in learning about the coastal environment. This is done through innovative live, marine habitat displays, interactive-exhibits, artistic décor, as well as various educational resources.

Encouragement is given to all participants, young and old, to explore and investigate the facilities and develop an understanding of the interrelationship between scientific learning and their daily lives. This concept bodes exceptionally well for the centre's interactive learning experiences. These programs are designed to enhance participants' scientific attitudes, while aiming to inject a sense of discovery and speculation into the activities offered to develop their scientific investigative skills.

The indigenous aspects of New Zealand society are highlighted through recognition and respect for Tangata Whenua (traditional owners) by including Maori knowledge about the natural and physical world. This is done by using Maori names for common marine species and place names and by presenting Maori oral tradition where applicable.

#### Ocean Institute Dana Point, California:

The Ocean Institute mentions the level of interaction at traditional informative centres such as museums, science centres and aquaria. They believe that these centres provide valuable information but the OI wanted to provide for those wanting to inquire more deeply. One of the ways that they have done this is by replacing the tour guide with an exhibit facilitator. The exhibit facilitator brings to life each exhibit through investigations and activities. An example of this is the seafloor seismometer exhibit. This interactive exhibit can be “played with” by jumping and watching the response of the seismic instrument. Visitors who wish to take that interaction further can test how far away the seismometer will detect their jumps. Part of the group stays at the seismometer with a walkie-talkie while the other part goes with the Exhibit Facilitator. The Facilitator takes them across the campus, progressively farther and farther from the exhibit, stopping to jump at the command of the observers back at the seismometer. If detected they move farther still. It's educational, it's fun and it's highly interactive, as well as place specific. The Ocean Institute is located in



California, a state that is prone to earthquakes; this knowledge is therefore tangible and relevant. It could be said that, while the exhibits can stand by themselves as interactive experiences, the exhibit facilitator is an integral part of the exhibit that takes it to another level for those visitors that seek to inquire more deeply.

When this idea is related to the Eco-Camp proposal there are a few factors that immediately present themselves. Ideally, Eco-Camp facilitators will be much more than standard eco-tour guides. They will lead participants to a deeper level of understanding and realization. A major factor determining the depth of learning will be the time allotted per group per visit. If the group is there only for a few short days, with no future planned visits than a very deep level of learning cannot be committed to. However, if the group is there for a week, or if they have future planned visits, than the level of commitment to deep ecological understanding can be reached. A second factor is the skills and knowledge of the facilitators. There will be a learning curve for facilitators in terms of their own ecological knowledge and the development of process skills.

#### *Sustainability:*

In this subsection my aim was to learn how the centres approached teaching the concept of sustainability. However I was confronted with the fact that many of the centres do not mention this as a part of their teaching repertoire, although in fact it is what they are doing. In an attempt to gain more information on this as well as other issues that were not fully answered I emailed the centres but the only centre to answer my questions on sustainability was the Woodbridge Marine Discovery Centre in Tasmania.

#### Woodbridge MDC:

As part of Woodbridge School (a Sustainable School<sup>2</sup>) the MDC strives to incorporate sustainable practices on a daily basis including recycling, power and water saving and the redevelopment of the garden area to include native plants. The MDC offers a range of resources to support other schools in the State that sign on as part of the Sustainable Schools program. The MDC offers educational programs to support visiting classes who are learning about sustainability in the classroom.

The MDC is affiliated with Woodbridge School, a school involved in the Sustainable Schools program; the teacher at the school involved in the project invited the MDC to be part of undertaking, promoting sustainable practices in the school and community. Through

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<sup>2</sup> Part of the Commonwealth's Sustainable Schools initiative.

the MDC's involvement with AMEA (Australian Marine Education Alliance) it continues to develop and promote sustainable living practices in schools throughout Tasmania (Foster, *personal communication*, Nov. 28, 2004).

As mentioned above all the centres are involved in the promotion of the concept and practice of sustainability. From understanding the specifics at Woodbridge and from overlooking the other centres' techniques, one can see that sustainability must resound throughout the entire centre. With the Eco-Camp in mind it is essential for the camp to focus from the outset on these issues. To persevere in sustainability is to leave a beguiling footprint of sublime nature intertwined with, **not without**, our humanness.

#### *Facilities / Learning Environment:*

This subsection focuses on where learning is realized at the centres, including the places, halls, rooms, dormitories, displays, vessels and rocky shores that make up each centre.

#### Woodbridge MDC:

At the Woodbridge Marine Discovery Centre in Tasmania there are a number of places where teaching occurs. A primary classroom, including touch tank and a secondary classroom overlook the D'Entrecasteaux Channel and Bruny Island. Teaching also occurs around the marine pond and the secondary touch tank, Foyer area (displays on human impacts/interactions with the marine environment), Rocky Foreshore, as well as the R.V. Penghana, a converted fishing boat – now a floating classroom (Foster, *personal communication*, Nov. 28, 2004).

#### Ocean Institute, CA:

On the website there is a link which allows the viewer to take virtual tours of different parts of OI. They have 360-degree panoramic views of all their buildings and areas for learning. Being able to access this via the Internet is enabling to the web researcher. They have three vessels: The Spirit of Dana Point, The Sea Explorer and the Brig Pilgrim. There are then 10 other places in which lessons concerning the marine environment occur. These are The Jelly Fish Room, The Tide Pool, The Explorer Room, The learning Centre, The Auditorium, The Pump Room, The Ocean Learning Centre, The Old Cove Native Plant Reserve and the Old Cove Reserve.

MERC:

MERC Long Bay is a purpose built waters edge facility. There are three separate accommodation areas including an eight-bedroom unit with wheel chair access. There is a large kitchen, dining facilities and a separate multi-purpose hall with seating for 100 people.

The dormitory building is capable of sleeping 70 people and the bedrooms range in size from two to twelve beds. The dining block contains a dining room for 70 people with a large kitchen equipped with modern stoves and refrigerators. The upper level of this block contains staff facilities. The activities building is a large hall with glass walls facing directly out to sea. It has seating for 100 people and is equipped with a number of audio-visual aids. Also in this same building is the main administration office. The hall has proved to be very popular for weddings. The centre's facilities also provide climbing and bouldering walls, conference facilities, a storage building and further facilities at a more northerly location in Waiwera. The Waiwera location is not unlike Long Bay, it is sheltered with a great beach, plenty of room for activities and the accommodation is right by the sea.

The most useful information gathered here, that can be easily transferred and thought of in terms of an Eco-Camp in Western Australia, is the website information from the Ocean Institute. It would be a superb idea for the Eco-Camp to have high-tech communication with the outside world through the use of the internet, thus enabling the Camp to promote itself throughout the entire process; all the way from the initial phase of development through to the finished product. This would also fit in with previous sections, concerning *History* and *Personal Dimension* by being able to tell the story of the Camp and how it came to be.

*Educational Programs and Activities:*

Under this subsection I summarize the educational materials and educational programs run out of the centres.

MERC:

The Marine Education and Resource Centre at Long Bay just might have the most material/programs/activities available of all the centres that I have studied. It covers all ranges of experiences from 13-15 year-old youth development programs to corporate training, as well as the full repertoire of outdoor educational activities.

MERC seems to be working towards an agenda of active learning and experience in the marine outdoor environment. It is a program I view as valuable and believe could be a basis

for programs run elsewhere. The information below is summarized from the MERC website under the programs listing (MERC, *Programs*, 2006-07-03).

**Adatok Games:**

This is a whole group exercise that is not weather dependent. The action is fast and furious as small groups compete against each other in a series of tests. Ultimately it is teamwork and strategy that lead to success. These exercises are most suitable for 7-12 year olds who thoroughly enjoy the marine theme and always attest to it being one of their favourite and most exciting activities.

**Archery:**

This is an ancient practice that requires discipline, patience and skill. With sound instruction everyone achieves, and a strike of the bull's eye is a lasting memory. This is an activity that can be undertaken by most people.

**Awaruku Bush Tour:**

This is a popular activity with groups that are studying or otherwise interested in the bush. The area is quite unexpected in that it is amazingly diverse and sits right within the Torbay area. The group will discover and gain knowledge of all the native flora and fauna.

**Beach Walk:**

An experience that many of us partake in and gain much enjoyment from, a walk on the beach is magic. On this walk the participants will become more aware of the beach environment, the animals and variety of life that live on the beach, with exercises such as shell identification.

**Body Boarding:**

One of those activities that takes priority when the conditions come together; storm conditions, wind swells and cyclones create surf on Long Bay Beach and when they do the groups head down to the beach. There is nothing quite like being pushed along by a wave; the exhilaration of a good ride is lasting.

**Canadian Canoeing:**

With the use of large open canoes, participants experience the importance of communication and quickly develop team paddling and control skills. The canoes can also be lashed together to form mock catamarans, providing stability for extended coastal expeditions.

**Coastal Mission / Coastal Discovery:**

This is one of the great ways to experience the coastal scenery of Long Bay / Torbay. This area has an astonishing rocky coastline and the program has participants negotiate different paths for high and low tide tours. This allows groups to see scenery and caves that are known to very few. The variance of the tide leads to the activities that will be run.

**Dinghy Games:**

Dinghy games are a good beginner activity that will no doubt boost water confidence thus enabling further pursuit of marine interests. The course is based around a buoyancy filled dinghy which participants experience by balancing, paddling, capsizing and swimming underneath. In MERC's description of this activity they mention their wetsuit and personal floatation device sponsors adding that the group will discover the virtues of appropriate safety garments while in deep water.

**Expeditions:**

MERC here describes the fact that they are open to all different possibilities and that given the pristine natural environment in which the centre is located there are many variations as to how long and what activities can be run during a group's stay. The beach itself is a good study; the rocky shore, Okura River Estuary, or the Okura bush walkway. The combinations are endless.

**Kayaking:**

Kayaking is a great experience. Not long after an introductory course participants grasp the essential strokes. The fun and games approach is very uplifting and quickly participants feel good and confident about themselves. They are then able to embark on coastal expeditions along the nooks and cranny's of Long Bay as well as surf on waves rolling onto the beach.

**Mega Games:**

These activities are excellent for introducing groups to one another (icebreaker) or to conclude a program with. They are large-scale games involving the whole group. Examples of the games that are played by MERC include; 'The Conservation Game', which involves the participants to be part of the ecological food chain and 'Who Done It' or 'Cluedo', where groups complete activities and use cards in an effort to work out 'Who Done It'.

**Orienteering:**

This is a class aimed at developing students' abilities to understand the elements involved in the proper reading of a map. With this introduction based course they are then able to

take part in orienteering events (without the use of a compass). MERC has developed a series of orienteering courses that are based upon professionally drawn maps. These courses are designed as a valuable resource for students from beginner to professional.

### **Outdoor Survival:**

This program runs indoors or outdoors and participants learn means of survival in the great outdoors. The basics concerning weather patterns are covered as well as thorough knowledge of the multi functions of equipment that should be taken on an outdoor experience. Participants gain knowledge on shelter building and cooking and what plant life is edible and what is poisonous.

### **Park Activities:**

Lessons learnt from the orienteering program can be applied to “Mega Environmental Mission”, “Nature Trail”, “Trivia Trail” and “Treasure Hunt”. These are all very popular activities that take you through the wonderful outdoor park environment.

### **Raft Building:**

This is a fantastic team building exercise. The group’s mission is to design and build a raft that will take them into the sea. The group soon learns whether they worked well together and chose the right designs and building materials or if they chose the wrong path, ending in a dip in the cold sea.

### **Abseiling:**

Abseiling on the wall is designed to give ‘first timers’ a gentle introduction to an activity that is safe and exciting but at first very daunting. Leaning over a sheer drop requires nerve and a great deal of faith that is the reason for the care that MERC takes. This is a natural extension to the rope and harness work that MERC sees through on their specially designed climbing wall.

### **Climbing:**

This activity is based around the climbing wall that MERC has built. The low height bouldering wall enables participants to develop skills without immediately being thrust into daunting conditions. The exercise creates cooperation and trust. This is because the climbers are harnessed and roped into the safety system by trained MERC teachers. The participant’s then use bolted holds on the wall to pull themselves up to the top and overcome any height fears that they might have had. It is said that as confidence grows the return descent is often the highlight.

**Rope and Harness Climbing and Abseiling Extension:**

This is an extension to climbing; where participants challenge themselves and any height fears they may still have. MERC's "Faith Leap" challenge and the "Group Tree Climb" activities are designed to enhance the group process via a shared adventure. The High Ropes course is an adventure all on its own at the top of tall trees. These challenges, suitable only for mature students and adults, are often used as a peak experience

**Rocky Shore Discovery:**

The Long Bay marine environment provides enormous scope for investigating many forms of life in and around the water. Using pictorial task sheets, students are able to identify living creatures such as, kina, starfish, shellfish and seaweed. Other studies include sand formations, local geology, weather and tides. A fun approach to this subject makes it most enjoyable and a variety of environmental games can be included.

**Sailing:**

Sailing is an activity that builds on the lessons learnt from the dinghy games. Under the watchful eye of a fully qualified instructor student's begin to learn the art of sailing. During this introductory lesson students 'have a go' at steering, turning and handling the sheets. As with many of the activities at MERC, teamwork is of utmost importance in order to perform at the group's optimum level.

**Snorkelling:**

This is a very popular activity though it tends to be more suitable for the summer months, due to the warmer water. For beginners there is an introduction to mask and snorkel use and then it is straight off to Awaruku Reef, only some 100 metres from the centre. The group hovers above the reef having a first hand look at the variety of marine life beneath them.

**Surf Confidence and Survival:**

This provides an opportunity for those not familiar with the equipment and techniques used in ocean related sports. It is a great chance for the group to develop skills that may save their own or others lives. MERC always aims for the group to enjoy themselves, developing water confidence and having fun while learning and this program is no different.

**Surfing:**

MERC offers a learn-to-surf program. There is nothing quite like being pushed along by the power of the ocean. Top instructors at MERC get the participants riding waves in no time.

**Team Challenge / Team Activities:**

An all weather option where groups are put to “test” using a variety of progressive initiative type of activities. Designed to draw strengths of participants to the fore, each challenge is a blend of the physical and cognitive. While not overtly physical, the activities do require teamwork, strategy and implementation for success. Activities may be used to address a variety of issues such as communication, goal setting and trust. A most suitable activity as camp draws to a close to unite groups in their commitment to solve problems. It can be run for the entire group.

**E Factor Training:**

This is the corporate team building division of MERC. E Factor delivers varied corporate programs such as team development, management development, leadership development, adventure activities, as well as conference and special events. These programs provide a holistic approach to training in an experiential environment. MERC’s training philosophy is one of synergy among business, experiential training theories and practical application (MERC, E Factor Training Brochure, p. 2). In a sense it is a way for a business team to get out of the office into a beautiful natural environment and at the same time, work on the skills necessary for successful social business interactions. This is done through themed outdoor simulations that build on theoretical sessions where business is integrated with experiential learning to provide a positive transfer into the workplace. MERC presents this understanding beforehand as an incentive for groups booking through the centre, stating “this investment creates visible benefits in the weeks and months after your program” (MERC, E Factor Training Brochure, p. 2).

All of this information gathered from MERC is important for the Eco-Camp. The Eco-Camp will be primarily an outdoor educational experience so I imagine the majority of programs having a physical component, though this will also depend on what each particular group is wanting from the experience. I thought it important to mention the corporate training because I can envision the Eco-Camp on the North West Cape having a unique role to fill in the corporate sector. With large offshore gas and oil reserves and many natural deposits of minerals on land, this region is unfortunately a hotspot in more ways than just biodiversity. Corporate people must experience this area in its healthy natural state so they know what the baseline for diversity and overall health is for this place. The Eco-Camp will be a means for them to experience this as well as to work on their team dynamics.



I have been a part of such a program with Capricorn Seakayaking (CSK) and the North West Cape Aboriginal Corporation. Woodside Energy (a large Australian Energy Company) sent their top executives out to Cape Range National Park and Ningaloo Reef to learn traditional culture from the local Aboriginal people. Hal Paine (owner of CSK) and I were responsible for taking them kayaking and snorkelling, letting them soak in and enjoy the beauty of the area. The experience showed us that a program such as this is valuable and achievable.

Woodbridge MDC:

The MDC in Tasmania is specialized in educational programs aligned with students from Kindergarten to Year 12, as well as interested visitors and community groups.

I believe that the Woodbridge MDC in Tasmania provides a useful example of hands on marine education and is complementary to the example from MERC. The Woodbridge MDC demonstrates how activities can be made appropriate to the ages and curricula of a range of school years. Boxes 1, 2 and 3 show a schedule and sets of activities for primary school aged children.

**Box 1:**

A day at the Woodbridge MDC

To start with it is helpful to note that the Centre's Marine Biologist guides all primary groups who visit the Marine Discovery Centre through a range of activities. Students have the opportunity to explore the underwater world with the aid of the live animals housed at the Centre and the many interpretive displays.

Opportunities are also available for upper primary groups to visit on a 2-day program. This incorporates all the events of a primary visit and includes a trip on the Centre's research vessel, the *Penghana*, to explore the Channel's marine environment.

- At 10:00am *Arrive and Introduction* – this includes a safety discussion and interpretation of animals living in the Marine Pond;
- 10:10 *Marine Pond Tour* - with touching time;
- 10:30 Choice of several *Whole Class Activities*;
- 11:00 *Morning Tea* - eaten outside on the balcony, a good time to spot seabirds and watch for dolphins;
- 11:15 Choice of several *Whole Class Activities*;
- 11:40 *Group Activities* x 3 - Choice of Group Activities where the class is divided into 5 small groups. Each group will spend 15-20 minutes at each activity, completing three activities before lunch and two after;
- 12:30 *Lunch* - at beautiful Silverwater Park;
- 1:10 *Group Activities* x 2 - complete last three group activities;
- 1:40 Choice of several *Whole Class Activities*;
- 2:00 Back to School.

(Woodbridge, *Educational Program*, 2006-08-31)

**Box 2:**

Whole Class Activities

- Pollution and Plastics Discussion - incorporates a discussion about Whales;
- Plankton Survey and Food Chains - using live plankton projected onto a screen;
- Discovery and Classification of Touch Tank Animals - a hands-on approach to looking at Tasmania's marine invertebrates;
- Sharks - shark biology and conservation using a live shark;
- Scallops and Sea Stars - biology, adaptation and live predator-prey interactions;
- Fish: Who, What, Where? - a discussion about fish adaptations to habitat;
- Hermit Crabs - a look at the biology of these favourites of the invertebrate world;
- Foreshore Investigation - subject to tides;
- Introduced Marine Pests - discussion at the Introduced Marine Pest Tank followed by a foreshore walk (subject to tides);
- Creatures of the Deep - a look at how marine animals survive in the deep sea;
- Underwater Forests - the importance of kelp and other seaweeds in Tasmania and a focus on what lives on Tasmanian reefs;
- Antarctica and sub-Antarctica - animal adaptations to cold;
- Water and Boating Safety - guidelines for safe boating in Tasmania;
- Aquaculture - focus on what is farmed in Tasmania;
- Sun, Surf and Sand - an introduction to coastal processes focusing on tides, waves and erosion;
- Marvellous Molluscs - a look at the characteristic features of molluscs using live snails, an octopus and our shell collection;
- Excellent Echinoderms - a look at the characteristic features of echinoderms using live and dried sea stars, sea cucumbers and sea urchins;
- Cool Crustaceans - a look at the characteristic features of arthropods, focusing on crustaceans, using live and dried specimens;

**Box 3:**

- Water Quality - hands on testing of marine water using real scientific methods and discussion of results;
- Whales - biology, behaviour, feeding, communication, classification and a look at video footage.

Group Activities

Before picking group activities for your class it is suggested that visitors enquire about the range of worksheets that are available at the centre for visiting classes.

- Touch Tank - just touching, Who Am I?, card game, sketching or worksheets;
- Marine Pond - just touching, sketching or worksheets;
- Aquarium Room - plastic art or worksheets;
- Primary Room - looking at plankton or seabirds, art, browsing displays or your suggestions;
- Seabirds - outside using binoculars and our guide;
- Foyer - browsing man's impact displays, games, or dressing up as a pirate;
- Fish Printing - use real flounder for printing on paper or calico.

(Woodbridge, *Educational Program*, 2006-08-31)

Boxes 4, 5, and 6 show activities suitable for a range of secondary students.

**Box 4:**

Grade 7/8-Day Trips

Fishing for the Future - focus on different fishing methods used commercially around Australia, biology of commercial species, net and trap designs, legal limits and man's responsibility to maintain the fishery.

Marine Biology - a comparison of the biodiversity of the benthic population of two sites in the D'Entrecasteaux Channel - for the serious science student, will include some simple classification, adaptations and examine the effects of introduced species on these environments.

Marine Inspiration - these trips are for Art or Language classes keen to use the marine environment for inspiration. Art classes will work around the Centre and are able to use live specimens, from microscopic to macroscopic, as subjects. Language classes spend time on the RV Penghana having a nautical experience for inspiration. We suggest a combination of these with half the day on Art theme and the other half on Language activities.

Grade 9/10-Day Trips

Marine Studies - a comparison of the abiotic conditions and biodiversity of the benthic population of two sites in the D'Entrecasteaux Channel - for the serious science student, will include classification, feeding relationships, adaptations and examine the effects of introduced species on these environments.

Foreshore Ecology - dependent on favourable tides, use different methods to sample the variety of life on the foreshore, what are the problems of living in a tidal zone and how do different animals and plants adapt to these extreme conditions.

Aquaculture - study the different methods used to farm species in the sea, examine the possible impacts of aquaculture on the environment and see at first hand aquaculture operations on the channel.

**Box 5:**

Grade 11/12 - Day Trips

Use the resources of the Centre to back up your course in Environmental Science, Life Science, Biology or Aquaculture. Rather than just one excursion why not book one day each term so that you can get seasonal data from the same sites or focus on an entirely different theme each visit, for example, abiotic variation, foreshore ecology, fish biology, variation within a particular phyla, or human impact on the marine environment.

- Foyer – Man’s Impact on the Marine Environment:
  - Aquaculture methods;
  - Introduced Species;
  - Pollution;
  - Boat Safety.
  
- Marine Pond and Touch Tank:
  - Vertebrate and invertebrate adaptations;
  - Commercial species identification;
  - Legal fishing limits.
  
- Aquarium Room:
  - Classification;
  - Feeding relationships;
  
- Secondary Laboratory:
  - Plankton survey;
  - Threatened species and marine reserves;
  - ‘Ecotrekker’ and ‘The Bay’ software;
  - Depth sounders and profiles of the sea bed.

(Woodbridge, *Educational Program*, 2006-08-31).

**Box 6:**Grade 9/10 Week Long S-Courses

The Centre is able to offer a variety of TASSAB accredited S-Courses with students spending a week studying at the Centre and sampling from our research vessel, the *RV Penghana*.

- Science syllabuses:
  - Ecological Stability SC04/05;
  - Marine Ecology SC04/06;
  - Environmental Science SC080.
  
- Aquaculture syllabuses:
  - Aquatic Ecology SC081 S;
  - Boat Handling (includes at MAST accredited Speed Boat License).
  
- Year 9/10 Courses accredited by TASSAB in Aquaculture are available.
- The Centre has a mussel and scallop farm lease. Visit the local Atlantic salmon and shellfish industry on the *RV Penghana*.
- View our baby crayfish and *Macrocystis* tank, donated by Seacare. The Marine Discovery Centre cultures Giant String Kelp (*Macrocystis pyrifera*) for replanting to aid the declining populations of this seaweed.

(Woodbridge, *Educational Program*, 2006-08-31).

All of these activities offered by Woodbridge MDC are of value to have noted in this thesis for they all have the potential to inform the development of programs for the Eco-Camp. I believe, with present education systems, it would be very difficult to get students and teachers to visit the Eco-Camp for moral, aesthetic and ethical reasons. However, I do see the Eco-Camp as a place where the other side of science, let us say the ‘spiritual side’, can be brought to the fore in the development of a holistic conscientious person. I believe that courses such as the “Marine Inspiration” mentioned above are on the right track. It is a goal of the Eco-Camp to be less rigidly focused on the straight-science and more open to experiencing the wonders of the whole.

*Vessels:*

Both the Woodbridge MDC and the Ocean Institute of California use vessels as part of their learning experience. These vessels are a valuable asset for both centres. If it is within the means of the Eco-Camp and logical (e.g. predominant sea and weather conditions at the

camp locations); I highly recommend that the camp work towards the acquisition of vessels for marine knowledge.

Woodbridge MDC:

The D'Entrecasteaux Channel is a varied, sheltered and safe waterway with uninhabited islands, an interesting history and fascinating marine ecology. The *RV Penghana* is a 15-metre research vessel that makes an excellent floating classroom, enabling secondary groups to explore the Channel environment. The *Penghana* is fully equipped with up to date GPS, radar and sonar equipment for use by secondary students. Box 7 shows how the vessel can be used.

Ocean Institute:

As mentioned earlier the vessels are two sailing and one motor. The sailing vessels are the Brig Pilgrim and The Spirit of Dana Harbour. The motorized vessel is the Sea Explorer. (Much more is written and said about these vessels on the web).

Both of these centres vessels are quite logistical for what they have set up. However, I would like to further promote the idea of having participants participate fully. I would like to see the Eco-Camp develop an avenue in which participants can help build/maintain small boats, most likely sailboats, as part of the experience. Here there are a few different directions, in terms of curriculum that can be related back to MERC and their 'Raft Building' exercise or it could simply follow the philosophy developing for the Eco-Camp as part of the holistic experience.



**Box 7:**

Activities on the RV Penghana

- We can measure:
  - Dissolved oxygen;
  - Temperature ;
  - Salinity;
  - Turbidity.
  
- We can collect samples using:
  - Plankton tow;
  - Dredge;
  - Drop line;
  - Long line;
  - Water sampler;
  - Benthos grab.
  
- We can visit:
  - NORTAS salmon farm;
  - BAILINGA mussel/oyster farm;
  - Note: these are not contact visits. We can view the operation from the sea at close proximity, but we do not go onto the farms;
  - Snake Island or Apollo Bay foreshores for environmental survey;
  - We can compare: information from a number of sites, for example, varying depths, varying exposure to environmental conditions and varying influence by man.
  
- We can provide:
  - Preserved plankton;
  - Previously collected data;
  - Reference information – books, journals and websites;
  - Local marine expertise.

(Woodbridge, *Educational Program*, 2006-08-31).

### *Education Models:*

In this subsection I am exploring the different educational models used by the various centres studied.

#### Woodbridge MDC:

The MDC in Tasmania has developed a small-scale aquarium that mimics their surrounding ocean environment. There are six different tanks that can be accessed for educational purposes. They are the Marine Pond, Seahorse Tank, Sponge Garden Tank, Rocky Reef Tank, Touch Tank and the Sandy Plains Tank.

#### **The Marine Pond:**

The marine pond is home to white-spotted dog sharks, draughtboard sharks, thornback skates, stripy trumpeter, cowfish, Tasmanian giant crab, southern rock lobster, globefish and many more. Visitors are welcome to pat the sharks and skates. The marine pond also houses a conger eel. At nearly 2 metres long, this impressive marine pond resident amazes many of the visitors to the centre.

#### **Seahorse Tank:**

Seahorses are beautiful animals. The Marine Discovery Centre houses five big-bellied seahorses. Unlike most of the animal kingdom, the male seahorse becomes pregnant. As these creatures are so delicate, they are housed with only a few other animals including sea stars and cowfish.

#### **Sponge Garden Tank:**

Sponge gardens are as colourful as a coral reef and are found in the deeper reefs of Tasmania. Plate sponges, pumpkin sponges and finger sponges create a spectacular sight at the Marine Discovery Centre. They also provide habitat for creatures such as elephant snails and nudibranchs.

**Rocky Reef Tank:**

Spectacular rocky reefs surround Tasmania, harbouring diverse animals and plants. The Marine Discovery Centre presents crayfish, abalone, anemones, giant kelp, wrasse and huge numbers of other reef animals in this display.

**Touch Tanks:**

There are two touch tanks at the Marine Discovery Centre. At these tanks visitors can handle hermit crabs, sea stars, anemones, sea snails, sea urchins, sea squirts and sea cucumbers.

**Sandy Plains Tank:**

The purpose of this tank is to come to an understanding that sand is deceiving. Trying to spot the camouflaged sea creatures in the sandy plains tank is almost impossible. The baby flathead, flounder, banded stingaree and scallops all bury themselves in the sand until they are barely visible.

These tanks are a great way to access a wide range of ocean environments in a short period of time. They are highly valuable especially for a centre operating on a small-scale. From the educators perspective the tanks are invaluable because they allow their lessons to become real in the minds of the students. It is the next step in the evolution of education. The student leaves the confines of the classroom and visits the MDC. At the MDC the lessons on the board and in the books become real/touchable.

There is a role for this at the Eco-Camp as well. With permission from CALM (Conservation and Land Management) the Camp could set up its own touch pools depending on the wants and needs of the visitors. It would be a way of catering for people who for some reason cannot enter the sea.

MDC Adelaide:

The Adelaide MDC is proud of their centre's interactive learning models. They provide an array of seven different models, which are used for educational purposes at the MDC.

These models shown are; The River Murray Catchment model (figure 1) which includes a 'pinball style' question and answer section and a PowerPoint presentation within the same model. Visitors need to make the correct choices to get the ball all the way to the Murray Mouth to become 'a friend of the River Murray'.

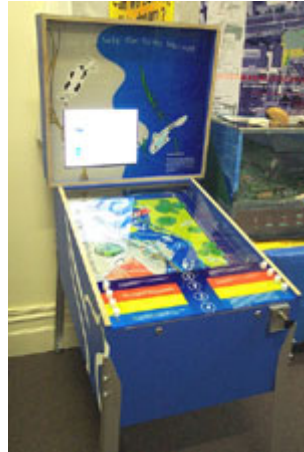


Figure 1 River Murray Catchment Model

The next model shown is The Beachcombing model (figure 2), which utilises a metal detector so that when it is held over a beachcombing item, e.g. a fibre ball, its corresponding living item, e.g. a seagrass plant, lights up on the display panel.



Figure 2 Beachcombing Model

The third model shown is the Coastal Birds model (figure 3) which features various coastal birds for identification, a visitor can lift up each bird wing for further information.



Figure 3 Coastal Birds Model

The fourth model is the Marine Protected Areas model (figure 4), which highlights the Great Australian Bight Marine Park and its various categories of conservation.



Figure 4 Marine Protected Areas

The fifth model is the Introduced Species Interactive model (figure 5), which requires visitors with making a choice between two similar creatures - one being native and the other introduced. This is used to highlight the similarities of these creatures.



Figure 5 Introduced Species

The sixth model is the Fishing Interactive model (figure 6), which includes an opportunity to fish and measure your catch. Visitors need to return any undersize fish through the return chutes.



Figure 6 Fishing Interactive Model

The seventh model is a new model; it is a specimen display.



Figure number 7 Specimen Display

The displays that have been developed by the Marine Discovery Centre at Adelaide are inspiring. They have been constructed in-house with grant money received from EviroFund and they are a testament to interactive tangible learning, or “learning made fun”. They demonstrate what can be accomplished from perseverance and dedication to sustainable marine education. They also demonstrate the fact that models do not have to be high-tech in order to be a lasting educational experience.

#### Ocean Institute:

The Ocean Institute operates their exhibits so that the general public as well as student visitors can gain a depth of understanding through interactivity with the exhibits. The Sea Floor Science exhibits are an example of this, allowing visitors to play with concepts or observable fact. This occurs in several ways: through manipulation of tools and equipment (e.g. visitors can operate a model hydrobot and search for signs of life under the ice of Europa, jump in front of a working seafloor seismometer to see how it detects seismic waves, or operate a student-made ROV in the ocean test tank); meeting a challenge that takes them throughout the site (e.g. visitors are challenged to search for geological clues to determine where the earthquake fault runs beneath the site, visitors can participate in a site-

wide “scavenger-hunt” to answer questions about the animals and exhibits); manipulating the phenomena themselves (e.g. visitors can generate “tsunamis” in the 14 foot wave tank by simulating an underwater landslide then seeing how their tsunami would affect the coastline, or pile up sand underwater to investigate slope stability principles).

In summation these educational models are wonderful tools for the Marine Education Centres that I have researched. For the Eco-Camp I see these models being of much assistance. By learning from what is most popular and engaging with participants at these centres we can then adapt these programs so that they can best fit into programs for the Camp. This would be a process of deep thought, for these models must realize the Camps focus of living in harmony with nature through traditional understanding of the land; doing so in accordance with MK’s Ecological Citizenship program and the underlying philosophy of deep ecology. Again, participants could be involved in developing and building displays and models for use by future participants as well as a way of enhancing their own understandings.

#### *Community Based Initiatives and Projects:*

This subsection takes an in-depth look at the involvement of the centres in the community. The aim of these initiatives is to raise community knowledge and consequent stewardship of their marine environment. This aspiration extends from the individual perspective all the way through to the global.

#### MERC:

An outstanding global initiative is promoted by MERC. It is the People to People International program. This enlightening program comes from one of the darker periods of our world’s history.

The time of its inception was 1955; the cold war had frozen the world in a stalemate. Two competing systems of government, communism and capitalism, were locked in a conflict that seemed destined to ignite a global nuclear war.

At the Geneva Summit in July 1955, President Dwight D. Eisenhower and Soviet Premier Nikita Khrushchev met to discuss their countries’ positions. Both leaders were determined to reduce tensions. President Eisenhower believed, if people could visit each other’s homes, attend their schools and see their places of worship, then the misunderstandings,



misperceptions and resulting suspicions, which were making war seem a viable option, would disappear.

Thus the People to People Program was born. From the start it was intended as a grass-roots effort. President Eisenhower said, "I like to believe that people in the long run are going to do more to promote peace than are governments". Eisenhower asked his friend Mr. Joyce Hall, founder of Hallmark cards, to help begin a private non-profit foundation to be called People to People International. On November 1, 1961, the first Board of Trustees met and elected Dwight D. Eisenhower Chairman of the Board, Joyce Hall Vice Chairman and Walt Disney Board member. The program grew from 16 students in 1963 to more than 12,000 in 1998. The present People to People Executive Vice President is Mary Eisenhower Atwater, the President's granddaughter (People to People, *History*, 2006-3-13).

Each winter MERC hosts the Australasian contingent of the People to People program. For many of them, MERC is their first stop. They arrive straight from a hot continental summer to Auckland's fickle winter. Each group has about 100 high school students. Often they have not yet met each other so the MERC program is geared towards team building and getting to know each other. Each group spends just one day at MERC. In all about three thousand 'People to People' students pass through the doors of MERC over a two-month period.

The People to People program highlights the scope and breadth in which MERC functions. This centre, more than any other I have studied, is dexterous in its ability to bring people to its shores and enchant them with its marine environment. I rate this ability very highly.

#### MDC Victoria:

The Sand Dune Revegetation Program is a huge project that MDC Victoria has been a part of since 1985. Projects have been undertaken by thousands of school students and industry groups throughout this period and the restoration of large areas of degraded coastal environments has occurred.

Through involvement in the program participants:

- Increase their knowledge about coastal formation and sand dunes;
- Learn about the importance of vegetation in protecting coastal environments from erosion;
- Participate in an action program to stabilise dunes using brush matting;
- Participate in revegetation of stabilised dunes.

(MDC Victoria, *Unpublished*, 2004)

Participants also gain a sense of ownership for the areas and a greater awareness of the need to protect these fragile environments.

Participants include both primary and secondary students, community groups and volunteers from business. Participants are primarily from the Geelong region including many schools local to the restoration areas. Support from local councils and committees of management were provided through the provision of material, advice and staff time.

The objectives of the Coastal Revegetation Program are:

To restore dune faces, major dune erosion 'blowouts' and other areas of significant coastal vegetation loss in areas identified by Primary Industries Research Victoria (PIRVic), the Marine Discovery Centre, local councils and committees of management. As well as to:

- ❖ Develop community awareness of coastal management issues through:
  - Student participation in the program;
  - Public participation in the program;
  - Development and dissemination of materials dealing with coastal vegetation issues for schools and the community.

For the year 2004 there were over 1179 participants that completed over 4617 hours of restoration work. A number of groups attended multiple times to allow all classes at one-year level to attend.

The groups consisted of:

- 8 Primary Schools;
- 8 Secondary Schools;
- 2 Volunteer Groups;
- 4 Community Groups.

School groups were sent pre-visit material outlining major aspects of dune formation and composition and threats to dune systems. These materials were designed to provide a link between the fieldwork in the program and the school curriculum.

In addition to the coastal revegetation project the MDC at Victoria conducts special programs throughout the year on the weekends. These programs bring tangibility and access to the locals so that they can experience the wonders of the marine environment, right in their backyard. Community programs include activities such as Marine Glass Art workshops, Marine Biologist for a Day, Junior Marine Scientist, Short Courses in Marine Biology, Shark Detectives, Fishy Facts and more. These programs mix both science and art and are good all around fun as well as educative.

Here it is important to note that the Eco-Camp is not being imagined as an entity that operates completely on its own. One of the key characteristics that MK teaches is that it is much more helpful and positive if you are inclusive and willing to share ideas and programs with other organizations. As with the above example, and with the one to follow, concerning coastal signage, I envision the Eco-Camp as a place where ideas and projects can be shared. Partnerships with Cape Conservation Group, CALM and other organizations are opportunities that must not be missed by the Eco-Camp.

Ocean Institute, California

### **Coastal Signage:**

Coastal signage has turned out to be a very popular activity that most of the centres studied have played an active role in. The Ocean Institute mentions their work in the most detail through their own newsletter, *Ocean Voyager*. From this publication I will convey the concepts and work behind projects such as coastal signage.

There are numerous projects that the OI is involved in with the community. These initiatives are undertaken in hopes of developing a greater respect for the ocean environment. “The Ocean Institute’s mission is ocean preservation through education,” noted Bentley Cavazzi, Communications Director. “It is therefore fitting that the Institute take a central role in the public to be ‘good tidepoolers’.” (Ocean Voyager, 2006, p. 4)

Coastal Signage is part of the Orange County Tidepool Preservation Project (OCTPP). The signs presented are all uniform in appearance and use symbols to notify visitors to the shoreline that it is illegal to remove or otherwise do harm to marine wildlife in tidepools. As

with many issues undertaken by all of the education centres studied, the signs have been developed because of a pressing need to educate the public about the fragility of our coastal ecosystems.

Jon Lewengrub, caretaker of the Ocean Institute's aquariums and manager of the Marine Life Refuge Project that is part of the OCTPP, stated "California's coastline is a precious resource that is enjoyed by millions each year. However, the numbers of species that inhabit our tidepools have declined steadily due to souvenir collectors, many of whom may not have known that their activity was both harmful and illegal" (Ocean Voyager, 2006, p. 3).

- Coastal Signage Rules:
  1. Never remove animals, rocks or shells from the tidepools;
  2. Never pick up animals, observe them where they are;
  3. Walk gently, taking care not to step on plants or animals;
  4. Never turn over rocks.

(Ocean Voyager, 2006, pp. 3-4)

Coinciding with the signage is a public education campaign, which includes the training of volunteers to monitor wildlife and to educate the public, as well as the creation of brochures and other give-away items. The volunteers will also assist in research, helping to survey the tidepools to look for differences in the distribution of inter-tidal life from the Newport Marine Protected Area (MPA), to Crystal Cove State Park MPA and down through the Dana Point MPA. The volunteers are also being asked to help conduct a study on human use of the rocky shore.

The overarching aim of all this work is to see positive change towards species diversity throughout Orange County's Marine Protected Areas. This of course is best accomplished through the education of the public. In early evidence noted by volunteers the program looks to be having an affect. An example that is noted in the newsletter reads as follows, "a father came up to the sign with his son who had collected shells to take home, he read the rules to his son and then said 'come on let's go put the shells back'" (Ocean Voyager, Pg. 5). This demonstrates the importance of teaching participants the fundamental rules of respect for different environments.

**Public Relations:**

The information in this section is important to our understanding of the success of the centres. Attendance figures, media coverage and lists of sponsors and achievements are presented so the reader can begin to understand the nature of what these centres have accomplished in marine education. At the same time it must be noted that I have chosen only a small amount of representative statistical information provided by the centres. The following subsections contain information that highlights the centres successes. The statistics are quoted from the centres' respective websites and from email contact.

*Grand Opening of the Centres:*

This is the date in which the centre was officially opened

<b>MERC:</b> March 1990	<b>MDC Victoria:</b> 1983	<b>Island Bay:</b> February 1996	<b>Ocean Institute:</b> Original – 1977 Revamped – 2002
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*Visitor Attendance:*

This subsection describes how people, schools and the greater community have reacted to the centres. It includes personal quotes, statistics and overall understanding of the centres success.

Woodbridge MDC:

Community awareness has been provided at the centre through word of mouth, open days, volunteer programs and the length of time the Centre has been in operation. Comments in visitor's book, feedback sheets, re-booking for next year are ways in which the centre records satisfaction ratings. For the year of 2003 there were approximately 9000 visitors. They included primary and secondary schools, week visits, walkthroughs, holiday and travel programs (collected from email with Jacqueline K. Foster, Jan 18, 2005).

MDC Adelaide:

The centre is currently booked out for 15 months in advance and needs to expand to keep up with demand. The centre had over 6,000 annual visitors; this includes 150 school groups, 1350 community visitors and the annual Star of the Sea students (MDC Adelaide, *Downloads*, 2005-10-15). From these statistics it is clearly apparent that the public is

supportive of this centre. Furthermore, the centre is currently constructing a state of the art building to cater for increased demand (MDC Adelaide, *Proposed Building*, 2005-09-22).

Island Bay (from 1997 till 2003):

In 1997 Anderlini and Hutt were contracted to offer their Marine Education Program to approximately 4000 school age students from 60 schools within the Wellington Metropolitan Region over the entire 1997 school year. During the first school term the number of schools that requested bookings for their program overwhelmed Dr. Anderlini and Ms Hutt. By the end of the 1997 school year, they had provided their program to some 8,000 school age children, 2,500 pre-schoolers and over 2,000 members of social groups including Rotarians, Lions Clubs, IHC groups and PROBUS members; a total of 12,500 persons. In addition, an average of approximately 500 visitors a month attended the Open Weekends (Island Bay, *Overview*, 2004-11-24).

The school visit program is now in its seventh year of operation and is increasing in demand as more school children visit. Over 8,000 school aged children a year attend the centre's 1.5- 2 hour education programs. Another 10,000 pre-schoolers and adults from social and service groups also book visits annually. A visit to the centre is now an integral part of most local schools' science curriculum and the programs are usually booked six months in advance. The once-a-month Open Weekends have also become so popular that the centre's facilities are often overflowing with visitors (Island Bay, *Overview*, 2004-11-24).

MDC at Bondi Beach:

The centre provides the following data:

- The centre provided on-site environmental excursions to 3,500 primary students in 2002 and 4,000 in 2003;
- The centre was responsible for the education of 600 local students in 2002 as part of an innovative stormwater consultancy program – and were contracted to deliver an adapted version to 500 students from Mosman;
- The centre is responsible for the running of four very popular Summer Activities Programs for the general public, which caters for 500 people per year;
- The centre started a very popular public multimedia presentation by marine specialists in which 100+ people attended;

- The Marine & Coastal Soup Box, annual professional networking association has been developed and run out of the MDC;
- The local families at the centres free monthly Public Open Days & environmental events have turned out in hordes in full support of the MDC;
- Bondi Beach MDC has trained and employed 12 marine biologist education staff over the course of its existence;
- The centre has attracted great media coverage with 90+ articles & 3 TV spots in 3 years.

(MDC Bondi Beach, *Media Stories*, 2004-08-30)

Ocean Institute:

The institute provides the following data:

- The public has overwhelmingly adored the O.I. In its original form as a 6,000 square foot facility it was operating at its capacity for several years. Presently more than 78,000 K-12 students and 6,000 teachers annually participate in OI's programs;
- On March 28, 2001, the Institute broke ground for a \$16.5 million Ocean Education Centre with the capacity to educate 135,000 students each year. This new facility has been open since mid-2002;
- More than 78,000 K-12 students and 6,000 teachers annually participate in the Institute's 61 award-winning, immersion style programs.

(Ocean Institute, *About Us*, 2004-09-01)

*Funding:*

This subsection documents how the centres support themselves financially.

Woodbridge MDC:

The Centre is funded through the Tasmanian Education Department and levies paid by visiting schools. Staff salaries are paid through the Education Department (Jacqueline K. Foster, *email correspondence*, Jan 18, 2005).

Island Bay:

In late 1996, the centre received funding from the Wellington City Council to rebuild a large outdoor pool to make it more accessible to young children and people with disabilities and to improve the indoor displays. Funds for construction were augmented by public

donations and the voluntary efforts of many local residents. Several private grants were also received from families with long ties to the Island Bay community and whose children had attended the education program. Construction and improvements were completed during 1997 and greatly increased the quality and range of experiences visitors could enjoy. Grants received during this period also allowed Anderlini and Hutt to assist local artists who created the Centre's unique marine sculptures and mosaics (Island Bay, *Early Obstacles and Successes*, 2004-09-24).

In late 1997, Island Bay applied for and received a grant from the Ministry of Education's LEOTC (Learning Environment Outside the Classroom) program to continue to provide their program to school age children for three years. The LEOTC contract was recently renewed for a further three years and now covers approximately 63% of the Marine Education Centre's operating expenses. The remainder of the centre's funding continues to be grants and donations from the local community and school and social group visits (Island Bay, *Early Obstacles and Successes*, 2004-09-24).

Early improvements to the Marine Education Centre's facilities were initially supported by grants from the Wellington City Council's 2020 Fund and the Pacific Development and Conservation Trust. Grants and awards received from the Royal Society of New Zealand, the Wellington South Licensing (Charitable) Trust, Creative New Zealand and by various donations from individuals and community service groups were used to promote science and conservation education among school children and the general public (Island Bay, *Early Obstacles and Successes*, 2004-09-24).

An application to the Royal Society of New Zealand for a "Science Promotion" grant was also successful and involved close cooperation with the Director of NIWA's (National Institute of Water and Atmospheric Research) Aquaculture Research Centre and several local intermediate schools (Island Bay, *Early Obstacles and Successes*, 2004-09-24).

#### MERC:

A list of the companies, organizations and governments that support the centres' studied.

- Hutchwilco, Canon, Mercury Marine, Lion Foundation A Gaming Machine Charitable Trust, Half Moon Bay Marina, Lottery Grants, Sky City Community Trust Auckland, The ASB Trusts and Lifeguard.



I envision that the proposed Eco-Camp could source funds from both grants and suitable sponsorship.

#### *Media Coverage:*

This is a subsection in which publicity written or broadcasted about the centres is presented. As can be seen from the following information gathered there is quite a difference among the centres as to how much effort is put into both informing the public about the centre and the recording of this information by the centres. The difference is probably a function of pressures such as sponsors requirements, financial security and staff availability.

#### MERC:

MERC produces a quarterly Newsletter that is named *Waves*, where the happenings of the centre can be read about. The newsletter can be accessed on the MERC website at [www.MERC.org.nz](http://www.MERC.org.nz).

#### Woodbridge MDC:

The MDC features in Mercury (a local paper) at least once a year. The centre was broadcast on ABC Radio on their Opening Day. The national ABC TV has presented news stories through the centre covering Elephant fish, IMP project and the National stamp launch.

#### Island Bay:

Although the centre does not have funding for advertising it has been called Wellington's best kept secret and relies entirely on word-of-mouth and articles in local papers to promote its activities.

#### Ocean Institute:

The O.I. has received wonderful media coverage and it is documented incredibly well within their own media and press room section (<http://www.ocean-institute.org/html/media/pressroom.html>, 2006-07-21). The O.I. also produces a quarterly newsletter that is called the *Ocean Voyager*. It is very informative and quite a handy way to gain an inside understanding to the goings on at the institute. This can also be located in their media and pressroom section.

The OI has 61 award winning immersion style programs. The programs have received the inaugural Walter Cronkite Award for Excellence in Maritime Education from the National Maritime Historical Society and the Sea Education Program of the Year from the American Sailing Association.

## **Chapter Five - Grateful and Giving Back:** Developing a Vision for a Marine Eco-Camp in the North West.

Through the experience of writing this thesis I have been lucky to be able to have the time to reflect on my life. It is something that not everyone has a chance to do, especially at such an early age. With this time of reflection I realize that I have been blessed with a wondrous life and I am ever grateful for this and the opportunities that it has afforded me.

By finding an organization such as Millennium Kids (MK) and being able to play a part in the development of the Environmental Citizenship program I have been able to experience a new level of understanding as to what it means to bring knowledge to people out-of-doors in healthy natural environments. The Environmental Citizenship program has provided me with a healthy understanding about the magical connection we have with nature. This feeling of interconnectedness brought forth a personal confidence to communicate this poignant feeling with persons that are open to, or are on the fringe, of connectedness themselves.

Through this learning experience I have had the privilege of interacting with people from different cultural backgrounds. These people allowed me to grasp the deeper underpinnings of the work that we are doing through the MK Environmental Citizenship program. Four such people are Ida from Surabaya Indonesia, Momma from Botswana South Africa, Nat from Perth, Western Australia and Theanor, an Aboriginal girl from Karratha, Western Australia.

These four people allowed me to see how MK's Environmental Citizenship program is valued. Through my own revelations, but more so through the perspectives of Momma, Ida, Nat and Theanor, the power and importance of bringing people from a multitude of cultural and environmental backgrounds to a place as sacred as Cape Range National Park at Ningaloo Reef was affirmed to me. By having people such as this in the camp - living openly, being comfortable and feeling free to express oneself - allows the group as a whole to begin to become reflective. This realization of self is talked about by Gary Snyder (1996) in reference to Mahayana Buddhism: followers begin to examine their own seeing, so as to see the one who sees and thus make seeing more true (Snyder, *Is Nature Real*, p. 195). This raising of one's consciousness is what happens when you are out in the wilderness of Cape Range or Nornalup National Park and it is good and it is healthy.

### **Status of the Ocean:**

I present this subsection on the status of the oceans as a lead-in to the next subsection on Shifting Baselines.

In 2001 Jeremy Jackson of the Scripps Institution of Oceanography dramatically brought to issue the status of our oceans in a cover article that was chosen by Discover magazine as the most important discovery of the year (Shifting Baselines, *Op-Ed*, 2006-05-12). Jackson and his 18 co-authors pulled together data from around the world to make the case that overfishing has had the most important impact on the oceans over the past millennium; furthermore, humans have had such a strong effect on the ocean for so long that, in many locations, it is difficult to even imagine how full of life the oceans used to be. One of the scientists' biggest concerns is that the baselines have shifted for many ocean ecosystems. What this means is that people are now visiting degraded coastal environments and calling them pristine, unaware of how they used to look (Shifting Baselines, *Op-Ed*, 2006-05-12).

Being from New York, and now living in Western Australia, this point comes off as obvious to me. Upon my arrival and introduction to the Australian bush and marine environment my initial impression was that everything here is pristine, that it shows no signs of distress from human infringement. Having been immersed in the issues I have come to know better, but it is important for us to note how easily this assumption about pristine nature can be made, especially by those coming from human centred, controlled and manipulated environments, such as large cities and their sprawling suburbs.

An example of this are people who go diving today in California kelp beds that are devoid of the large black sea bass, broomtailed groupers and sheephead that used to fill them. They surface with big smiles on their faces because it is still a visually stunning experience to dive in a kelp bed. But all the veterans can think is, "You should have seen it in the old days." Without the 'old-timers' knowledge, it's easy for each new generation to accept baselines that have shifted and make peace with empty kelp beds and coral reefs. This is why it's so important to document how things are - and how they used to be (Shifting Baselines, *Op-Ed*, 2006-05-12).

It is easy to miss changes in the ocean. Put simply, the ocean is big and deep. But sometimes, if people have studied the same oceanic trends over time, we get a glimpse of a highly disturbing picture. Jackson (2001), for example, has documented the nearly complete disappearance of the ecosystem he built his career studying: the coral reefs of

Jamaica. “Virtually nothing remains of the vibrant, diverse coral reef communities I helped describe in the 1970s,” Jackson says. “Between overfishing, coastal development and coral bleaching, the ecosystem has been degraded into mounds of dead corals covered by algae in murky water.” Nothing you would want to make into a postcard (Olson, 2002, LA Times).

This has occurred in but thirty-years, an infinitesimal time span for the utter destruction of a marine ecological environment. This destruction must not be allowed to continue and in order for it to be reversed people have to be made aware of past trends, for as my year-12 environmental science professor would state, “Without knowledge of the past you are bound to repeat yourself in the future” (Payoski, personal communication).

### **Shifting Baselines:**

I helped run the Environmental Citizenship program at Cape Range National Park at Ningaloo Reef from the 22<sup>nd</sup> of April to the 4<sup>th</sup> of May 2006. On Tuesday the 2<sup>nd</sup> of May I, along with Catrina, taught at the Exmouth District High School.

After returning from the Range to Exmouth, we squeezed ourselves into the confinements of Winston’s Backpackers Hostel. Sleeping in bunk beds was a far cry from sleeping in swags underneath the star lit sky. However, the reason for our staying on in Exmouth was to teach. I was to have approximately 15 minutes per class in which I would have the chance to make an impression upon the students.

I spoke with Catrina and we discussed our plan of action. She having been a teacher for 15 years of her life, as well as having been the CEO of MK for 10 years, is, to say the least, comfortable at the helm. I, however, am still new to the game and only just getting my feet wet. I am excited at the prospect of teaching, though I must admit; the nerves get a good working out. Nonetheless I wanted to make my 15 minutes count and Catrina suggested the topic of Shifting Baselines, a concept that I introduced to her a few months back. I thought that this was a great idea. I would start my talk with a short discussion about Shifting Baselines, show the Shifting Baselines video, which highlights before and after states of the environment and finish with a dialogue about the North West Cape. I would concentrate on the fact that the town was only established, as recently as 1967 and that tourism in the year 2002-03 was three times as profitable as commercial fishing (the next highest net income-earning sector for the town (CALM, Ningaloo Draft Management Plan, 2005).

Shifting baselines is a new concept and I believe it to be powerful and accessible in its practical application, (I highly recommend a visit to the website

[www.shiftingbaselines.org](http://www.shiftingbaselines.org)). Generally applied the term deals with quality-of-life decisions one faces daily. Shifting baselines are the chronic, slow, hard-to-notice changes in things, from the disappearance of native wildlife (Rock Wallabies) and flora (Spinefex) to the increased drive time from Fremantle to Subiaco. If your ideal weight used to be 60 kilos and it is now 65, your baseline – as well as your waistline – has shifted (Olson, 2002 LA Times).

Material presented in the Shifting Baselines video comes from research conducted on the marine environment. There are two focal questions that underpin this work: What is nature to look like in the future? And more important: What did nature look like in the past?

I chose to bring up the town's age in the hope of inspiring the students (the future) of Exmouth. I wanted them to realize that the town is but an infant and that they have the freedom and ability to make it what they want. I raised the issue of economics because I wanted them to understand the reason why people visit Exmouth. Why they think it is unique. The answer is simply its beautiful natural environment. The town is at a crossroad. There are many interested in the short term profits that can be made by development, such as the new Exmouth marina; and many others who are interested in the long term stability of one of the top 25 biologically diverse hotspots in the world. Exmouth as a township has a choice to keep its original baseline, a choice that many people around the world have not had a chance to make. For many like me raised in and around New York City, the baseline changed before we were born. People such as ourselves are not without power, we can make the choice of what we want for the future, but we were not able to make the choice in the first place. This is the point that I was trying to express to the students at Exmouth, in that one-day, in those slim 15 minutes.

I believe that the students did understand that Exmouth is relatively an unspoiled land, though I am not sure that they took to heart that this is the reason why people come to visit their part of the world. I feel as though they were indifferent to whether it was developed or not. This seems to stem from the universal want of modernity and the belief that the development of land leads to better things. The older classes (year 11 and 12) were very detached, as if they were too cool to have a voice or to care, in my opinion a sad commonality shared by students of that age. The younger students were more inspired and more pro-active in sharing ideas of what could be done to preserve the ecological integrity of the area. This activism must be supported. This is MK's forte, the empowerment of youth. The problem is the distance of Exmouth from Perth. An Eco-Camp in the Exmouth

region would surely support these students' motivations as well as give them a beacon for how sustainability can be achieved in the area.

### **Affinity for the Ocean:**

My affinity is with the ocean and it is within this salty realm that meaning and connectivity have been engendered in me. In this research I am looking to express this experience as an emotional breakthrough for me, and also to show how people exposed to these environments react and make connections from practiced understanding. It is the status of the ocean in its entirety as an all-encompassing living system that I want to promote and share with others. This two-year journey has allowed me to gain inside perspectives as to how many lovers of the ocean are working to awaken, to educate, to re-connect people with the rhythms of the natural world. This has been done in academia through my research into Marine Education Centres and their various journeys. I have also been fortunate to find MK and with this organization I have taken a conscientious step to involve myself in what I want to call Marine-Based Ecological Education (M-BEE).

The practice of the latter has given me a sense of purpose, for I believe that the areas in the North West and South West of Western Australia which MK purposefully visits for its Environmental Citizenship programs are those sacred places where nature still reigns, places where the magic is not lost. It is not my purpose here to explain in detail the ecological status of the land and marine environment; rather it is to make a case for the preservation and conservation of this area in all its ecological richness, for the sake of Gaia and all her inhabitants. To be able to travel to this part of the world and experience a robust cultural coastscape is truly priceless. I, along with others, envision a Marine Eco-Camp along the North West Cape founded on M-BEE.

### **History of Exmouth:**

The history of Exmouth hadn't even crossed my mind until I started to do some research for the teaching I was to do at Exmouth District High School. As I started to look into it, commonalities and contrasts in the development of the WA and US West coastlines presented themselves. First Exmouth is extremely young as a town, second the population of Exmouth is small, third tourism is a huge contributor to the economy. When speaking with the students, I explained that, being in WA is like going back in time to what the West Coast of the United States might have been like before its careless over-development. They could see that what has happened in California could happen in Western Australia and more specifically in the greater Exmouth region.

Exmouth as of 2006 is in its 39<sup>th</sup> year of existence. It is absolutely a young town. Accordingly this means that Exmouth at least for its recorded history as a township is at its original baseline. This is not to say there was no human impact prior to 39 years ago or that there has been no impact thus far in the town's history, it is just to point out that it is in its infancy.

*Aboriginal Perspective:*

Amazingly enough this land that I am suggesting as in its infancy in terms of Western occupation, is absolutely not in its infancy in terms of Aboriginal stewardship. Ningaloo Reef and the adjacent foreshore have a long history of occupancy by Aboriginal communities. The foreshore and hinterland of North West Cape contain numerous Aboriginal sites such as burial grounds, middens and fish traps that provide a historical account of the early habitation of the area as a tangible part of the culture of local Aboriginal groups.

The earliest Aboriginal groups to inhabit the peninsula were the Jinigudira. The Jinigudira inhabited most of the land adjacent to the reef along the North West Cape. The Baiyungu inhabited the areas South of Coral Bay (Ann Preest, personal communication). The archaeological record of the Cape Range Peninsula is significant in that it provides the earliest confirmed record of Pleistocene marine resource use in Australia. Aboriginal habitation of the North West Cape and Exmouth is thought to have commenced at least 32,000 years ago (with some reports of 38,000 years) and continues up to the present (Western Australian Planning Commission, 2004).

Although the majority of local Aboriginal people now live in towns such as Carnarvon, Onslow and Exmouth, individuals and families retain strong ties to particular sites. The Jinigudira still maintain and associate with the North West Cape and are recognized as the traditional owners of these lands. Despite disruptions to traditional life, Aboriginal people seek to retain social, religious and personal bonds with their traditional lands. Current Aboriginal usage of the area includes camping and fishing, as well as limited hunting of turtle and dugong (CALM, Ningaloo Draft Management Plan, 2005).

A history of this breadth and depth is hard for those with a Western mind-frame to fathom. We are much more used to history being told within a short time frame. This is the case with the European history of this same area.

### *Early European History 1618 – 1850:*

The first recorded sightings of North West Cape were by the Dutch vessel “The Zeewolf” in 1618 and “Mauritius” in the same year. Early maps published in 1625 and 1627 refer to “Willems River” and “Jacop Remmessens River”. There is conjecture that these rivers are Yardie Creek or Exmouth Gulf mistaken for a river mouth. Pelsaert of the Batavia undoubtedly set foot in North West Cape en route to Batavia, 1629. It is probable that W. De Vlamingh visited North West Cape in 1697. “These men noted this land as unfavourable. From the sea the towering cape, guarded by razor-sharp reefs, could not have presented an attractive picture in comparison with what lay further north – tropical islands where forests march down to the seas and palms and white sandy beaches entice the traveller to linger” (Wilson, 1980, p. 43).

These unfavourable reports on the area deterred further exploration until nearly two centuries later. A French expedition lead by Nicolas Baudin in 1801 was responsible for naming Point Murat and the Muiron Islands and Philip Parker King completed a survey of Exmouth Gulf in 1818. He named places such as “The Bay of Rest”. In 1811 The Rapid (an American three-masted wooden vessel built in Boston in 1807) was wrecked near Point Cloates, thus heralding the first of a series of contacts that Americans have had with North West Cape (Wilson, 1980, p. 43).

A small nomadic tribe of 2,000 Jinigudira Aboriginals occupied the North West Cape until the turn of the century (Ann Preest, personal communication). Numerous middens and small coastal caves have evidence of their occupation and have been recorded by WA Museum.

### *Pearling and Pastoral Settlement 1850 – 1912:*

After the voyage of Lieutenant King and following the discovery of pearls in Broome and elsewhere along the coast, the area was occasionally frequented by stray pearling luggers; but it did not yield sufficient rewards from men risking their lives in the cyclonic storms which often ravaged these coasts. The great storm of 1876, when sixty-nine men lost their lives by drowning, was sufficient deterrent to induce men to seek pearls in calmer waters (Wilson, 1980, p. 45).

In this same year J. Brockman acquired pastoral leases, which covered the entire North West Cape. He sold portions of these leases that included Ningaloo, Exmouth and Yardie Station to Thomas Carter, the famous ornithologist in 1888. Carter was the first to take up



residence in 1890. He was responsible for the construction of most of the coastal wells that exist to this day. They bear Aboriginal names, which were carefully recorded in Carter's diaries.

Ann Preest has recounted the plight of the local Aboriginal people to me during cultural awareness training. Many of the Aboriginals from this time period were unwillingly taken onto the pearling vessels and used as 'disposable divers'. If these men survived the highly dangerous dives, they, more often than not, did not make it back to the coastline. They were either killed or wounded and fed to Tiger Sharks. Many of the women who were left as widows were also murdered or forced into work for the settlers. It was a horrible time for the Aboriginal people.

#### *Lighthouse Era 1911 – 1942:*

Point Cloates and Vlamingh Head Lighthouses were constructed in 1911 and 1912 respectively. Point Cloates Whaling Station was established in 1912 and operated intermittently up till 1957 when it was finally closed. During this period Yardie Station and Exmouth Station became separate entities. Pearling Luggers continued to gather shells in Exmouth Gulf.

#### *World War II - Oil Exploration 1942 – 1960:*

In 1942 the US Navy established a submarine base under the code name "Operation Potshot". Extensive facilities were built adjacent to where Learmonth Airforce Base now stands. Although the submarine tenders only stayed in the area for a very short period, the base continued to operate as a refuelling facility. Australian Army, Navy and Airforce personnel operated early warning radar, radio stations, AA guns and provided fighter cover for submarines. The US Navy established a PBY, or Flying Boat, based at the Bay of Rest. The famous Operation Jaywick that attacked shipping in Singapore Harbour departed from Exmouth Gulf. The Japanese bombed the location in 1943. A cyclone in 1945 extensively damaged the base, and troops were withdrawn (Shire of Exmouth, *History*, 2006-09-11).

In 1953 WAPET (Well and Production Equipment Team) acquired the use of the remaining defence buildings and commenced an era of oil exploration, which was highlighted by a significant oil discovery in Rough Range in 1954 (Shire of Exmouth, *History*, 2006-09-11). WAPET constructed a road network that is still in use (e.g. Charles Knife Road and Shothole Canyon).

### *Communications - Prawning Era: 1960 – Present:*

In 1962 agreement was reached between the Australian and United States Governments to establish a VLF (very low frequency) Communications Station at North West Cape. The town of Exmouth was created to support this facility. Both were officially opened in 1967. MG Kailis Fisheries established a prawn trawling industry in 1964 at Learmonth, and Morgan and Sons from Broome established a Pearl Culture Operation in 1965, MG Kailis commenced the Exmouth Pearls long line operation in the waters of the eastern side of the Exmouth Gulf. Bullara and Giralia Stations were added to the Shire of Exmouth in 1985. The boundary of Exmouth was extended to include Ningaloo Station in 2001 (Shire of Exmouth, *History*, 2006-09-11).

### *Synopsis:*

This above synopsis is a short summary of the history of the North West Cape and the small township of Exmouth, contained therein.

Although small, the importance of Exmouth should not be underestimated, as it is the hub of the North West Cape. It is the place where first impressions are made, and where people visiting the area learn about the local community, the shire and the greater peninsula.

People visit the North West Cape largely because of two parks: Cape Range National Park and Ningaloo Marine Park. Both of these parks are absolutely magnificent and the word is spreading.

### **Cape Range National Park:**

A national park covering part of the existing Cape Range National Park was first gazetted as a 13, 424 ha reserve in 1964. In 1971, the status of the reserve was raised to a Class A reserve and it was named Cape Range National Park. In 1974 Yardie Creek pastoral lease land from Tantabiddi Well to 6 km south of the Yardie Creek watercourse was included within the park increasing the total reserved area to approximately 47, 655 ha<sup>2</sup>. To the west the park is bounded by the Ningaloo Marine Park, which extends to the High Water Mark in areas adjacent to the national park. To the south, the Learmonth Air Weapons Range borders the park. To the north and north east it is bounded by Unallocated Crown Land and by Exmouth Gulf pastoral station to the east.

Cape Range National Park is located near Exmouth, about 1200 km north of Perth on the North West coast of Western Australia. The park encompasses 50, 581 ha of the Cape

Range peninsula, a heavily dissected karstic range and fringing coastal plain adjacent to the northern part of the Ningaloo Marine Park.

The park is important for its range of ecological values—undoubtedly of local and regional significance, but also increasingly recognized for its national and global heritage values. The area is being considered for World Heritage nomination. It is within reason to view the Ningaloo area to be of ‘outstanding universal value’ which is a key requirement to being recognized as worthy of World Heritage recognition (CALM, Cape Range DMP 2005, p. 1). The conservation values of the park include ancient and relictual subterranean fauna, diverse habitats (e.g. karst, protected gorges, the anchialine system, coastal plain) and the presence of species occurring at the limits of their geographical range or as geographically isolated populations.

Many people who visit the Cape Range do so for its visual appeal: the rugged red topography of the range bordered by the serene blue of Ningaloo Reef. Visitors now place a greater emphasis on appreciating the natural environment and a lesser emphasis on fishing as the key reason for visiting (Carlson and Wood, 2004). The number of visits to Cape Range National Park has increased from approximately 87, 000 to 194, 000 per year over the past 10 years (CALM, Cape Range DMP 2005, p 66) and it is likely that use of the coast south of the park has increased similarly, with only minor improvement in the standard of access or facilities being made in recent years.

#### **Ningaloo Marine Park:**

The Ningaloo Marine Park was originally gazetted in 1987 and on 30 November 2004 the Park boundary was amended to include the whole of the Ningaloo Reef in the Marine Park.

Ningaloo Marine Park is located off the North West Cape of Western Australia, approximately 1200 km north of Perth and cover areas of approximately 263, 343 ha. Ningaloo Reef is the largest fringing coral reef in Australia. Temperate and tropical currents converge in the Ningaloo region resulting in highly diverse marine life including spectacular coral reefs, abundant fishes and species with special conservation significance such as turtles, whale sharks, dugongs, whales and dolphins. The region has diverse marine communities including mangroves, algae and filter-feeding communities and has high water quality. These values contribute to the Ningaloo Marine Park being regarded as the State’s premier marine conservation icon.

The Ningaloo area has very high social significance. As well as a wealth of Aboriginal history in the area associated with extended occupation, the area is very important for a variety of recreational pursuits and for nature-based tourism that centres on the reserve's natural attractions. Due to the close proximity of the reef to the shore, visitors can enjoy a wide variety of nature-based tourism activities without the need for lengthy boat trips.

Seasonal aggregations of whale sharks, manta rays, sea turtles and whales, as well as the annual mass spawning of coral provide unique opportunities for visitors to observe marine fauna and key biological processes within the reserves. Approximately 200,000 people visited Ningaloo in 2004 and participated in a range of nature-based activities including wildlife viewing, boating, fishing, diving, snorkelling and a variety of coastal uses. The tourism industry generates significant income for the region with the whale shark industry being a major contributor. The remoteness, wilderness and seascape values are also important intrinsic aspects of the area that are valued by the community. The 'Ningaloo experience' is a cherished part of Western Australia's coastal heritage.

A unique feature of the coastal waters of Western Australia is the presence of a poleward, shelf-edge flow of tropical water, the Leeuwin Current, which flows down the Western Australian coastline. The current flows year round but is stronger and closer to shore during autumn and winter due to the absence of the opposing southerly wind stress and associated nearshore northward flowing Capes and Ningaloo currents that occur during the late spring and summer months (Pearce & Pattiaratchi, 1999; Taylor & Pearce, 1999).

Other major influences on the North West Cape are the regular occurrence of severe tropical storms (cyclones), the low level of freshwater and sediment input to the nearshore waters of the Cape and the high wave energy of the ocean outside the reef. The above natural characteristics and influences combine to produce a high level of marine diversity. Much of this marine biodiversity is poorly described. Its conservation however is not only important from an intrinsic point of view but also as the fundamental basis of major recreational, tourism, fishing and, potentially, pharmaceutical industries.

The conservation significance of the Ningaloo Reef was recognized in the 1960s by the Western Australian branch of the Australian Marine Sciences Association that recommended the reef be established as a marine reserve. In the 1950s and 1960s commercial whaling, turtle hunting and fishing operations were based in the region. In the 1970s and 1980s, fishing was the main reason people came to the area. Over the past decade a major shift to more passive, nature-based activities has occurred (Wood &

Dowling, 2002) although recreational fishing is still a popular pursuit. This trend is expected to continue.

*Statistics Concerning Cape Range National Park and Ningaloo Marine Park:*

Recreational activity in the park is focused on the marine environment of the Ningaloo Reef. Surveys by Wood and Hopkins (2001) revealed that 83.6% of visitors to Exmouth considered Ningaloo Reef as a reason to visit the area, with 57 % considering it the most important reason. In contrast, 59.9 % considered Cape Range National Park as a reason for visiting but only 12.6 % considered it the most important reason. Similarly, in a survey of over 500 visitors to Cape Range National Park, Polley (2002) reported that the most popular activities were appreciating nature and scenery (85%), relaxing (82%), swimming (71%), snorkelling (68%), viewing marine wildlife (66%), viewing terrestrial wildlife (65%), walking/hiking (62%) and photography (61%). Fishing was participated in by 43% of the visitor's surveyed (CALM, *Ningaloo DMP*, p. 66).

The reserves are remote from the major Western Australian population centres and the Park extends along 300 km of coastline. Visitation levels to the reserves have been relatively low due to their distance from Perth, limited or difficult road access to the coast and few visitor facilities. However as the values of Ningaloo Reef become better known, visitor numbers have increased and are expected to continue to increase at >5% per annum. (CALM, *Ningaloo DMP*, p. 66)

Annual visitor numbers to the surrounding Gascoyne region are approximately 270, 000 with an annual expenditure of approximately \$149 million (Gascoyne Development Commission, 2003). Of this, \$127 million is spent per year by visitors to the Ningaloo Marine Park and Cape Range National Park (Western Australian Tourism Commission, 2002). The whale shark watching industry contributes significantly to this total, being worth \$12 million per year. A 2004 survey indicated that 48% of visitors to the Park are from Western Australia, with the remainder coming from other States (12%) and overseas (39%) (Carlson & Wood, 2004).

*Education at the Parks:*

Easy access and the proximity of the reef to the shoreline provide excellent opportunities for community education about the marine environment. The reserves are used by local schools and by Perth-based universities and schools for educational purposes. There is, however, great potential for this use to be increased. Public education about the marine

environment, through active participation, greatly assists management. The desired outcome of public education is to increase public awareness and understanding of conservation and management issues in the Park and of the marine environment in general. In a local sense, this increased understanding helps develop a real sense of community ownership, which subsequently leads to better protection of the ecological and social values of the reserves. Non-extractive educational activities will be permitted in all zones of the reserves.

## **Chapter Six - Eco-Camp:**

I have described the North West Cape and its natural wonders in detail because at this point in time the near term possibilities for an Eco-Camp seem greatest in this region, although the South West is also an ideal site. This is due to a number of factors including the relationships that have been built in Exmouth among MK, Capricorn Seakayaking, the Traditional Owners of the land, the Cape Conservation Group (CCG) and the Exmouth District High School. Also the number of visits per annum by MK is greater to this area. The climate is favourable because of its tropical location and it will lend itself to the use of green technology.

### **An Eco-Camp on the North West Cape:**

The idea of the Eco-Camp has come about as a natural extension of the work that is being done by MK and Capricorn Seakayaking through their partnership in the Environmental Citizenship program. The concept of an Eco-Camp on the North West Cape has developed organically over time and this thesis represents my contribution to that process. To say the very least it has been a living and learning process that has led me to this point, and I am happy for that.

It has been my experience with the North West Cape and the effect it has had on all those involved that has given me the confidence to continue on this path. As has been mentioned in earlier chapters there is a sense of the sacred and a feeling of magic that graces you when you enter Cape Range and Ningaloo. This feeling is the essence of my vision of the Eco-Camp.

### **Eco-Camp Ethos:**

The ultimate aim of my thesis is to develop the foundation for the establishment of an Eco-Camp in Western Australia. I have been living and experiencing life all the while that I have been writing this thesis, and many of these experiences I have incorporated into my thesis. My research and experiences have together generated a vision of living, experiencing, and teaching in the wilds of nature; from this has come the concept of a physical Eco-Camp. In the subsections that follow, I attempt to draw together my learning from my study of marine education centres and to mould this together with my experiential learning and teaching with MK. I present my ideas using the same framework I used to describe the marine education centres in chapter four.

### *Vision:*

I spoke first of the importance of a vision or an ideal. As I have explained, I am re-imagining what learning out of doors in the wilds of nature could be. These ideas are fresh from my mind but I believe they will be the beginnings of this re-imagination. Therefore the vision for the Eco-Camp: “To bring people to healthy nature, showing them its present vitality, and living and learning within it.”

The Eco-Camp provides a place where people from all over the world come to share and celebrate the values of the North West Cape. They come to learn in and from the whole community of life here so they can give back to this community of life. The Eco-Camp is a place where participants are immersed in nature and attuned to its rhythms. They feel deeply safe, alive, and inspired to effect change.

The Eco-Camp will begin as a low tech, camping-based endeavour, able to be established in any one of several locations on the cape, able to accommodate 25 people. In 10 years time, an Eco-Camp may also exist in a fixed location with entirely green technology, able to accommodate 50 or more people.

### *Mission Statement:*

The Eco-Camp is going to be a lived experience. It will immerse participants in a remote location for days at a time. The definitive statement of the purpose of the camp must bring to life the influence of immersion in nature. Therefore, the mission statement for the Eco-Camp is: “To influence participants through immersion in a remote robust marine environment; whereby participants attune themselves with the rhythm of the natural world.”

The purpose of the Eco-Camp is to re-engage participants with local nature and culture and to help them develop the capacities of their mind, heart, spirit and hands. These are needed to take on the responsibilities of caring for and healing Gaia.

### *Primary Objectives:*

Primary objectives outline the ways in which the Eco-Camp is aiming to educate participants through understanding and appreciation of the local ecology. It is to map out how the mission statement is to be accomplished for an Eco-Camp:



1. To bring participants back to the reality of healthy nature;
2. Foster understanding of Aboriginal knowledge in participants;
3. To enable participants to Bless and be Blessed by the Earth;
4. To give back to the local community through conservation projects.

*Beliefs:*

The Eco-Camp will rest on a set of deeply held beliefs. It is a place where my teaching experiences from the North West Cape with MK can be brought to light. The Eco-Camp is based on the belief that, “there is no better way to understand nature than to experience nature, and that nature is the best teacher”. By having people from Africa, Australia, America, and Indonesia in a remote and healthy ecological system such as the North West Cape of Western Australia I have experienced and seen others experience the power of the natural environment. It is invaluable for people to experience how nature functions without an over-bearing human presence.

*Sustainability:*

In terms of sustainability I believe that the Eco-Camp presents some exciting opportunities. The Eco-Camp will move with the seasons: Walpole in the summer and Ningaloo in the winter, with room for flexibility according to the weather that year and the availability of other spots along the coast.

The Eco-Camp will be a way for participants to escape the busyness of modern society: the cell phones, the cars, the email, the constant interruption, of always multitasking. It will instead focus participants on the beauty of life at that moment. It will be a movement, a re-aligning focus on simplicity and appreciation, in accordance with nature. This is the essence of sustainability.

*History:*

History is the story of how things came to be as they are. I have found that historical accounts provide useful insights into understanding the marine education centres studied. In my view it is therefore imperative to record the Eco-Camp’s process of development. The story of how the Eco-Camp developed will be a valuable tool for people in the future for reflection and learning. It will also be helpful to others who are imagining or working to accomplish an Eco-Camp of their own or something similar. It will help make a larger movement more possible.

### *Personal Dimension:*

In researching the marine education centres I often found the personal dimensions of the history the most instructive. The personal dimension of a story reveals the spark that ignited the fire of passion in the person/s or group responsible for establishing a centre. A record of the stories of the people involved in the Eco-Camp would be a great asset. To interview these people, to hear and see their passion would also be a powerful educational tool for the Eco-Camp.

### *Future:*

Most marine education centres studied were planning for the future even while knee deep in their present reality. The Eco-Camp must also, not just stop and be satisfied with the one or two good ideas that led to its development. The Eco-Camp should always be asking, what's the next step? The camp should never become complacent; every step should be the first step. The passion must remain in the dance. There also needs to be creativity, adaptability and hard-headed strategic thinking about the future of the Eco-Camp. These are all necessary qualities in the movement towards sustainability.

### **Eco-Camp Education:**

Each marine education centre has a different focus and a different set of techniques, but all have the goal of marine conservation through education. The centres' studied are allowing the marine environment to become more deeply understood and loved. From the range of techniques researched I will now identify which will be relevant to education at the Eco-Camp.

### *Educational Philosophy:*

The MDC in Victoria spoke of how their centre was surrounded by a great diversity of coastal habitats, highlighting the importance and value of teaching from these natural environments. This is a central goal of the Eco-Camp: to immerse participants in a robust ecosystem from which environmental lessons will emerge with facilitation. The land, the foreshore, and the sea are our best teachers. This is a point I think that must be noted because it is where my proposal differs from all the centres studied. The Eco-Camp proposes a few "exhibits" made by participants but there will be an explanation in immersing participants in *actual nature*.

From studying MERC as well as Island Bay, and having personally spent time with Aboriginal friends I learned the importance of cross-cultural engagement. Aboriginal

oversight at the camp can be a living example of how to relate to Gaia's rhythms: a holistic relational natural-cultural approach. These lessons will be at the crux of the camp. Participants will be inspired so that when they return to their homes and life's daily routines they will continue to be aware and reminded of the lessons learnt and the overall flow of nature. Hopefully they will act in accordance with this knowledge, rather than forgetting and losing it in life's superficial busyness.

#### *Sustainability:*

The main point of sustainability for the Eco-Camp is that all actions must be thoroughly thought through in relation to achieving our vision, mission and objectives. We do not want technology or money to lead the camp astray (for the tail to start wagging the dog). It must always be primarily focused on giving participants the ecstatic experience of living immersed in healthy nature.

Generally speaking, the Eco-Camp would be teaching sustainability by living it in all aspects. The idea, as elaborated in the Environmental Citizenship chapter, is to remove the distractions that are ever present in our modern lives. By doing this we are able to live with full loving attention as opposed to being constantly distracted and only half attentive, to any-one-thing at any-one-time. I believe that the camp would be open to technology but only as it fulfils a need and is itself sustainable. Camps such as this could be at the forefront of green technology, such as solar panels - for heating water, or generating electricity and wind energy, for larger-scale operations. The camp could provide a testing ground for forward thinking companies to trial their products, such as portable solar devices and off the table ideas such as solar kites. It is also possible to imagine being able to provide some food from the surrounding environment: fishing, hunting, and learning from the local Aboriginal people about bush tucker and medicine.

#### *Facilities / Learning Environment:*

In this subsection we can begin to conceptualize the Eco-Camp being established somewhere on the North West Cape. Along this vast stretch of shore there would be ample outdoor learning readily available: from beach walks, to snorkels, to kayaking, as well as exploring and learning from the interior land. Truly the outdoor environment would be the place of our learning.

### *Vessels:*

This camp will have kayaks, a craft powered by the body, the wind, and the tides. I also imagine there being a larger vessel. I am not imagining this as something that the Eco-Camp owns or moors, rather as a partnership that is developed with local operators. The details of the arrangement are for another time, but the idea is grand. I see the Eco-Camp partnering with a large yacht or catamaran like Whale Song and under the power of the wind experiencing the stunning Ningaloo Reef. This partnership could go deeper with the development of research, databases, and school programs, in similar fashion to what the MDC at Woodbridge does with their vessel and its research and school programs.

### *Educational Models:*

The models mentioned by the centres are wonderful and I especially appreciate the efforts made by the MDC Adelaide. They have achieved great functionality and tangible learning with their physical models, which have been made in a homely, low cost, do it yourself way. These models also echo the immediate ecological environment which all of the centres' have deemed to be very important. They serve as inspiration for what is to be done at the Eco-Camp; however I anticipate that the camp will develop its models in an organic manner, following the patterns that are presented by place. With the initial concept of the Eco-Camp to be light on infrastructure, all models must be simple. Some will be made by participants themselves. Therefore they will have to be easy to carry and able to be broken down. I believe that this will present a great challenge for mobile sustainable technology and I view this as a good thing. The North West Cape is sunny, windy, and on the doorstep of the Indian Ocean. The possibilities for joint sustainable energy research are endless. This will be an effort to re-connect modern humans with ancient nature using green technology.

### *Community Based Initiatives and Projects:*

The centres' that I have studied are doing great things! There are so many people doing wondrous work for Gaia and much of this tangible work is in the form of community-based projects.

The work that MERC is doing with its 'People to People' program inspired me to realize that 'People to Nature' is what the Eco-Camp is all about. On a grand-scale these Eco-Camps could start to pop up throughout the world. They will be adaptive so that they can preferably take root in any healthy natural environment. Knowledge and function will be shared through this movement.

The Eco-Camp will lead to intimate knowledge of the local marine and coastal environments. There are many possibilities that will flow-on, such as Coastcare/coastal stewardship programs. Just as the MDC in Victoria has done great work with their Sand Dune Revegetation Project, the Eco-Camp can do similar work. MK is active in this field already. Through work done on the Environmental Citizenship program a campaign of awareness has begun for the plight of the Gilbert's Potoroo.

I also imagine the Eco-Camp being intimately involved in the recording of the seasonal weather, animal sightings, tracks, scats... The knowledge that participants gain could be used for interpretive signage or for rejuvenation projects in their own local environments. These participants will experience the baseline of a healthy environment as opposed to the heavily manipulated environments that most of us call home. There is immense value in this.

*Ida and Momma:*

My above comment, concerning the value of participants immersing themselves in a healthy naturally functioning ecosystem, comes from experience. As has been mentioned at the start of this chapter I have had the privilege of working with an Indonesian named Ida and a South African named Momma. Ida has grown up in Surabaya, Indonesia. This is not the Indonesia that I so easily lose my thoughts in; great waves, tropical rain forests, beautiful corals, and crystal clear water. Rather, it is a densely populated industrial city located on the island of Java.

Ida who was in Western Australia finishing her Masters at Curtin University has connections with Tunas Hijua Club, which is affiliated with MK through partnership. She joined us for the Environmental Citizenship program in April 2006. Ida is a novice at swimming, had never snorkelled before, never been in a kayak before, never slept outside under the stars before: she was to experience all of these things for the first time on the North West Cape.

Momma, who was an undergraduate at Murdoch University, joined us for the April 2005 Environmental Citizenship program. She was similar to Ida in that she did not know much about swimming, had never snorkelled or kayaked before, and had never really been in an environment such as, the North West Cape. This is fair enough, considering that she is from Botswana, South Africa; a landlocked country. On these programs it is my responsibility to

initially look after those who are not comfortable in the ocean. This means that I had the privilege of sharing moments of discovery with both Ida and Momma.

To express their emotions and the looks on their faces is impossible, they were both elated, joyous, and seemed to me to be completely alive, living the moment. The smiles on their faces told the story of our connection with Gaia and the understanding and feeling of acceptance that overcomes a persons' persona when they are immersed in nature.

Ida, on the first day's kayak, after enduring some hardship and uncomfortableness, began to get the hang of the craft. She started to feel the rhythm and timing of when each stroke should be made. When this happened she was then able to free her senses to the greater environment. After a few moments of silence she looked back at me and said, "Brendan this is so beautiful" and that was it, she was hooked.

Momma, who as I mentioned earlier is from Botswana, and was studying biology, had never been in the ocean before. But she took to it like a champion. My most lasting memory of my time spent with her was on her first snorkel dive. We secured a life vest around her, quickly showed her how to use the snorkel and the mask, put some fins on her feet, and swam her out to the coral reef. We had a few small dramas with water in the mask and water in the snorkel but for most of the snorkel dive it went perfectly smooth. As we got to the shallows, I removed Momma's fins and helped her take off her mask. She was absolutely beaming; she said to me, "Brendan that was amazing! That was the first time I have seen those fish alive, swimming in their own habitat. Every other time I have seen them it has been in a fish tank or it has been on the dissection board at University." Momma, for the rest of the trip, couldn't get enough of the underwater world and the serenity that it offers.

I am sure that the magic of the time spent by these two wonderful young ladies at the North West Cape will never be forgotten. I believe that there is a good chance that their experiences and those of many of the participants in the Environmental Citizenship program will enhance Gaia's future prospects by building in these participants an environmental ethic. As will be mentioned at the conclusion I also see this building into a movement of Eco-Camps across our planet, a crescendo that will awaken the slumbering masses to their duties as ecological citizens.

### *Education Programs and Activities:*

When reading through the list of materials, activities, and programs that MERC provides you can really start to see the great range of outdoor marine based learning. I think that the Eco-Camp has an opportunity to fulfil a niche in the area of environmental immersion learning. The next step from MERC's example is a complete raptness in the environment, attuning us with the rhythm of the Earth. Youth development, corporate training, Aboriginal experience, teacher retreats, there are so many programs that can be run with participants ranging from young school children, to retirees and white-collar business people: programs and activities such as sea kayaking, snorkelling, orienteering, outdoor survival, bushwalking, beachcombing, surf confidence, surfing, as well as the entire concept being influenced by Aboriginal understandings.

A further way to imagine this experience is to take a journey in the mind to, "a day in the life of an Eco-Camp".

- ***Pre-dawn*** – the group awakens before sunrise and walks to an area set aside as sacred for the viewing of the sunrise. The group sits or stands in a semi-circle and raises their consciousness with the rising of the sun.
- ***Breakfast*** – the group prepares breakfast and lunch for the day. Most likely we will be away from the camp for most of the daylight hours.
- ***Morning Discussion*** – there will be a period of time each morning in which the group will discuss the day's logistics. This time period will also be used to accomplish some of the set goals for the particular camp. An example of this could be a discussion revolving around the Eco-Camps use of renewable energy; what are the sources, how they work, and how much energy is created and saved.
- ***Morning Activity*** – most likely the group will be led on a kayak expedition. This expedition will take the participants out into the Indian Ocean on the protected lagoon side of Ningaloo Reef. The ocean is exquisite; participants will encounter a plethora of wild life in the water and air around them.
- ***Lunch*** – the group will stop at a magic spot along the coast that calls to their spirit (or their stomach). Most likely this spot will be a place devoid of other humans and the group will have time to explore the vast beauty of the coastline.
- ***Afternoon Activity*** – After the food has digested, it's back in the kayaks for a short paddle to a snorkelling spot. At this spot a local marine biologist will convene and lead the group on a snorkel through the coral playgrounds. The

group will be given time to ask questions. Most likely we will also invite the biologist to join us for dinner so the conversation can continue.

- ***Return to Camp*** - we will tuck our kayaks away behind a sand dune and drive back to the camp (this is pre-organized and we will use bio-diesel in the van that is provided to us from the multiple fish and chip shops in Exmouth town).
- ***Afternoon Free Time*** – during this period in the afternoon participants will have time to do what they like; be it explore the beach, take a nap, or write in their journals. This is an important time for self-reflection.
- ***Dinner*** – the group, as with breakfast and lunch, will be responsible for all the facets of the meal: preparation, cooking, cleaning, and tidying up.
- ***Night Time Discussion*** – on either the first or second night of the camp we will be lead by Hal or by a local Aboriginal on a cultural awareness discussion. We will become aware of their beliefs and understanding of the land that we are learning from. It is an emotional experience; it will make you sad, scared, and angry all in the same sitting. However, participants will greatly appreciate its value.
- ***Bed Time*** – the group will then prepare for bed, laying their swags out underneath the stars and falling asleep in the open, exactly as it should be.

### **Conclusion:**

This thesis has been a wonderful life experience. I believe that this research has the potential to be followed through in the establishment of not only a set of Eco-Camps in Western Australia, but also a global network. The contextualization of this is the return of humans to our roots, a way of life that we are much more acclimated to, in which we are awakened to the sensitivities of Gaia and our roll as caretakers.

The reason I proclaim this global network is that I have seen the power of our return to nature on a multi-cultural and international scale. I have seen this through MK in general and more specifically through MK's Environmental Citizenship program. I have personally had the pleasure of working with participants from the USA, Africa, Indonesia, and with both Aboriginal and Non-Aboriginal Western Australians. As was mentioned above, I have seen and experienced with these people the power of immersion in the natural environment. Many of these participants had never experienced anything like what we shared with them before in their lives, yet when they were there it felt natural and comfortable.



There are already plans afoot for MK to travel to Java in Indonesia, to run the Environmental Citizenship program. This stems directly from the experience that Ida had in the North West Cape. I envision in the future an Eco-Camp operating from this island. MK also operates out of South Africa and Katrina has been there twice to run programs similar to the Environmental Citizenship program. I can also envision an Eco-Camp being run from this location. There is the possibility of an Eco-Camp in North America, with an MK operating in Canada. In New York lives Doug Milstein a personal friend of mine and a participant of the program in April 2004. I am also a New Yorker and can envision a camp operating on the East End of Long Island, somewhere along the twin forks.

This is all forward thinking; it is a push, a drive. It is a force and in many ways a calling to return to nature. I am in Western Australia as I type this and on this day September 14, 2006, Al Gore's movie *An Inconvenient Truth* is premiering. I have not seen the movie but I have followed Al Gore and I have been watching his interviews of late. There is an idea that is related in this thesis that I listened to Al Gore describe last night. The idea is that we are at a tipping point, where many ecologically minded citizens have worked diligently to get humanity to. It has been slow, tedious and often arduous work. However, I as well as many that I know believe that a movement of ecological citizenship is upon us. It is the aim of the Eco-Camp and its overriding philosophy of oneness with nature that I see as helping us pass the tipping point, leading us into a wave of ecological citizenship.

I plan to see this through.

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Appendix #1 – MK Green Teams Ten Steps



**MK GREEN TEAMS 10 STEPS**  
The MK Inquiry Methodology

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**PROJECT DETAILS**

LOCATION

PURPOSE OF PROJECT

PROPOSED DATE

AUDIT TEAM MEMBERS

**1. ENVIRONMENTAL/SUSTAINABILITY AUDIT**

**A. List the indicators of a healthy environment.**


**B. List the indicators that there are environmental problems.**


**C. List the signs that show someone is looking after the area.**


**D. What challenges or opportunities are there for change?**




## MK GREEN TEAMS 10 STEPS

The MK Inquiry Methodology

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### 2. DESCRIBE THE PROBLEM YOU WOULD LIKE TO ADDRESS

A. What is the problem?

B. Where is it?

### 3. RESEARCH THE CAUSE AND HOW TO SOLVE THE PROBLEM

A. What/who caused the problem?

B. List the different ways the problem could be solved

C. Who/what gains from these changes?

D. Who/what loses from these changes?

### 4. SET YOUR GOALS

What do you think you can achieve?

### 5. IS THE ENVIRONMENTAL PROBLEM ON PRIVATE OR GOVERNMENT OWNED LAND?

A. Who owns the land? Contact them to discuss whether there is a plan to address your problem

B. Do you need permission to undertake your project?







## MK GREEN TEAMS 10 STEPS

### The MK Inquiry Methodology

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**B. How will you let the community know what you are doing?**


**C. Why is it important to let the community know what you are doing?**


**D. What equipment will you need?**


**E. Will the project require funding or in kind support?**


**F. List the people who can help you.**


### **8. CONSULT WITH STAKEHOLDERS**

Present any changes to key stakeholders for feedback about your plan of action. Make any changes to your plan according to stakeholder feedback.


### **9. CREATE A TIMELINE OF ACTIVITY**

Undertake your project. Work through each step according to your plan.

### **10. EVALUATE AND REPORT ON YOUR PROJECT. CELEBRATE!!**

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## Appendix #2 – The Matrix

### **ETHOS:**

In this section I am looking to understand the centre. I am trying to bring to light the reasons for the centre's existence, how it came to be, what it is trying to achieve, and where it hopes to be in the future. I have identified 9 subsections/categories in which the centres under study have illuminated their particular *ethos*, and these are as follows:

1. **Vision** – A statement of where the centre ultimately wants to be. It is the ideal of the centre.
2. **Mission Statement** – It is the definitive statement that defines the purpose of the centre's existence.
3. **Primary Objectives** – Identifies the centre's core motivation. Can clearly outline what the centre's purpose is. This immediately lets the inquirer grasp the overall concept of the centre.
4. **Beliefs** – This falls more unto the aesthetic realm of the centre's motivation. In which a statement about the values and heartfelt reasons for the particular centre is stated, as well as the place (the ocean), the centre is working to educate about.
5. **Sustainability** – How the centre promotes the concept of sustainability throughout its framework in a holistic manner.
6. **History** – The factual information of the centre from initial work till present working condition.
7. **Personal Dimension** – Allows insight into what person/s, groups, committees, or anything of the sorts that initially sparked the idea that is now a marine education centre. (Commonly clumped together with history but I believe that this is a different category, in which you delve into the personal story of the centre's culmination.)
8. **Future (Fut)** – Sets agendas and goals for forthcoming years.

## **Education:**

Here I am looking at how those experiencing the centre are taught; covering all aspects from the learning environment/s, educational materials, to the models used to enlighten patrons as to the happenings of the marine environment.

- 1. Educational Philosophy** – This is a look into the educational experiences that take place at these places of learning and the philosophies that are embedded within them. They range from concepts of stewardship to the quest of interactive learning.
- 2. Sustainability** – How the concept of sustainability is communicated to those that pass through the doors of the centre.
- 3. Facilities / Learning Environment** – A look at where learning is realized at the centres. These are the places, halls, rooms, dormitories, displays, vessels, and rocky shores that make up each centre.
- 4. Vessels** – This is a short section describing the use of vessels and the learning opportunities that they can provide
- 5. Education Models** – A description of the types of lessons and learning events being administered at each centre. As well as the types of model's that are being used for interpretive purposes at the centre..
- 6. Community Based Initiatives and Projects** – Taking an in-depth look at the involvement of the centres in the community. Generally the initiatives put forth through the centre to better the local community. There is also a focus on all other projects set forth through the centre for the betterment of the individual self or the Ocean as a whole.

## **Public Relations:**

In this section I am looking to access all information that is factual, in a way that cannot be misinterpreted. The information in this section is of utmost importance for it is in these numbers, media statements, and lists of achievements that the reader can begin to understand the success of these centre's for marine education.

1. **Grand Opening** – Simply the date on which the centre was officially opened.
2. **Visitor Attendance** – How people, schools, and the greater community have reacted to the centre. It covers personal quotes and overall understanding of its success.
3. **Funding** – How the centre supports itself financially.
4. **Media Coverage** – A section in which all information written or broadcasted about the centre is covered. Also where any public relations work can be brought to light.
5. **Statistics** – These are the numbers that support the centres existence.